

USU Medicine

Uniformed Services University of the Health Sciences



Caring for those in harm's way • Navy surgical support for the Marines
Rebuilding Iraq's medical schools • Malaria outbreak

USU Medicine

The magazine of the Uniformed Services University of the Health Sciences.

James A. Zimble, M.D.
President

Larry W. Laughlin, M.D., Ph.D.
Dean, F. Edward Hébert School of Medicine

Patricia A. Hinton Walker, Ph.D., R.N.
Dean, Graduate School of Nursing

Cinda J. Helke, Ph.D.
Associate Dean, Graduate Education

Sharon K. Willis
Executive Editor

Ellena Vasquez
Design

Master Sgt. Ann Bennett, JO2 Robert Keilman, Cmdr. Bruce Baker, Maj. Jack Davis, Maj. Erik Koda, Lt. Col. Kris Peterson, Peter Esker, Maj. Stephanie Redding, Steven Kaminsky, Cmdr. Scott Sherman, Lt. Col. Robert Rush.
Contributors

Photo Credits:

Master Sgt. Ann Bennett, Sharon Willis, Cmdr. Bruce Baker, Lt. Cmdr. Patricia McKay, Lt. Col. Robert Rush, Maj. Elizabeth Rouse, Capt. Jeffrey Molloy, Cmdr. Mike Hall, U.S. Navy, U.S. Marine Corps, U.S. Army, U.S. Air Force.

Established by Congress in 1972 and operated by the Department of Defense, the Uniformed Services University of the Health Sciences (USU) is the nation's federal medical school and graduate school of nursing. Its mission includes teaching, training and research. USU graduates serve worldwide.

USU Medicine is published twice a year. It is a magazine for alumni and associates of USU. The contents do not necessarily reflect the official views of, or endorsement by, the Department of Defense or the university.

Please send comments to:
Sharon Willis
Director, Alumni Affairs/
Executive Editor, *USU Medicine*
Uniformed Services University
4301 Jones Bridge Road
Bethesda, MD 20814-4799
swillis@usuhs.mil

*Produced by the
Henry M. Jackson Foundation
for the Advancement of Military Medicine*



In 1991, our country claimed victory in a brief, volatile and hard-hitting war in Iraq – a war that tested the medical doctrine and equipment then in use and also tested the men and women sent to save lives on that harsh and unforgiving battlefield. That war, Operation Desert Storm, honed our awareness of challenges such as the possible use of chemical and biological weapons, environmental health hazards, the psychological stressors of combat, and the residual health effects that war may leave on those who fight it. Operation Desert Storm was the first large-scale conflict that involved our alumni and was the crucible that shaped many of them into today's medical leaders in Operation Iraqi Freedom.

More than 200 of our physician and graduate nurse alumni are serving with distinction in the dusty, inhospitable theater of operations. Their efforts range from providing frontline trauma surgery for U.S. and coalition forces, to caring for sick and injured Iraqi citizens and enemy detainees. Many more of our alumni are providing the best in care and support throughout the military's medical evacuation system, serving on critical care air transport teams, at Landstuhl Regional Medical Center (now commanded by Col. Rhonda Cornum, class of '86), or at one of many stateside military medical treatment facilities.

Media coverage of the achievements of military medicine in this conflict has been unprecedented. Most stories feature at least one of our graduates, although they are not always identified as such. Print coverage has been provided by the Washington Post, the New York Times, the Los Angeles Times, the Wall Street Journal, the Baltimore Sun, USA Today, the Miami Herald, the Charlotte Observer and many other national and local outlets. Major stories have also appeared in Time and Newsweek, U.S. News and World Report, on CNN, ABC, CBS, NBC, Fox, and on National Public Radio as well as online news services and more in-depth magazines. To a degree not seen before, stories have emphasized the care, competence and compassion of the military medical team and the strength, patriotism and positive attitude of those for whom they care.

But the story is better told by actual events. On the pages that follow, you will read about the dedication to duty, professionalism, and leadership demonstrated by USU alumni who are now truly caring for those in harm's way.

James A. Zimble, M.D.

A handwritten signature in dark ink, appearing to read 'Ja A Zimble', written in a cursive style.

Contents



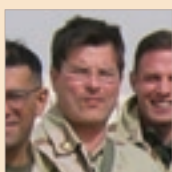
2 Frontline

AFRRI welcomes a new director, USU is recognized for one of its graduate programs, and a class of 1986 alumnus is named to a top department post.



6 Caring for Those in Harm's Way

As Iraqi Freedom, Enduring Freedom, and other operations continue, USU physician and graduate nurse alumni put their training and skills to good use aboard ship, on the battlefield, and around the globe.



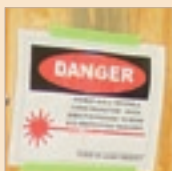
18 Navy Surgical Support for the Marines

Cmdr. Bruce Baker ('86) provides an inside look at the way Navy medicine is evolving in the wake of front-line deployments to Afghanistan and Iraq.



20 Rebuilding Iraq's Medical Schools

USU graduates offer textbooks, computers and guidance to help bring Iraq's medical schools and ailing health care system up to current standards after years of neglect.



22 Findings

USU faculty advance research interests through publications, earn multi-million dollar research grant awards, and top paper honors.



26 Classnotes

News from around the alumni community.



30 From the Field

When more than 40 U.S. Marines contract malaria during a deployment to Liberia, USU faculty and alumni offer assistance and expertise every step of the way.

Radiology Chair Appointed to Advisory Council



James G. Smirniotopoulos, M.D., the university's Department of Radiology and Radiological Sciences chair, has been appointed to serve as the Defense Department's Health Affairs representative to the newly formed National Advisory Council for Biomedical Imaging and Bioengineering.

The council, under the oversight of the Secretary, Department of Health and Human Services, was mandated by Congress in the Public Health Service Act to advise the Secretary, Assistant Secretary (DHHS) for Health, the Director, National Institutes of Health, and the Director, National Institute of Biomedical Imaging and Bioengineering, on matters relating to the conduct and support of research, training, health information dissemination and on other programs that address biomedical imaging, biomedical

engineering, and associated technologies and modalities with biomedical applications.

Eight ex-officio members, plus 12 individuals appointed by the Secretary, DHHS, make up the committee. In addition to the Secretary, the remaining seven ex-officio members include the NIH director, NIBIB director, the chief medical director of the Department of Veterans Affairs, directors of the Centers for Disease Control and Prevention, National Science Foundation, and the National Institute of Standards and Technology, and the Assistant Secretary of Defense for Health Affairs, or their designated representatives.

Smirniotopoulos was appointed by Assistant Secretary of Defense for Health Affairs William Winkenwerder, Jr., M.D., to serve in his stead. Committee members serve overlapping four-year terms.

AFRRI Welcomes New Director

Colonel David G. Jarrett, an Army physician, became the fourteenth director of the Armed Forces Radiobiology Research Institute this summer, replacing Col. Robert R. Eng, who had served in the position since December 1997, and who left to become director of the Proponency Office for Preventive Medicine at the U.S. Army Medical Command, Fort Sam Houston, Texas.

Jarrett came to AFRRI from his previous assignment as head of doctrine development for the Medical Operations Division of the U.S. Army Medical Research Institute for Infectious Diseases at Fort Detrick, Md., where he also served as flight surgeon in charge of the aeromedical isolation team.

Originally from Indiana, Jarrett earned his Bachelor of Arts degree in zoology from Indiana University in Bloomington, followed by his Doctor of Medicine degree at Indiana University School of Medicine in 1973. He subsequently trained in obstetrics and gynecology at Charity Hospitals of Louisiana in New Orleans, and is board-certified in emergency medicine.

Jarrett is well versed in the AFRRI mission, having served the institute previously as head of Military Medical Operations, senior instructor for the Medical Effects of Ionizing Radiation course, chief physician for the Incident Response Team, and medical team chief for the Emergency Medical Radiobiology Assistance Team. Other key assignments include nuclear casualty management delegate to the NBC (nuclear, biological, chemical) Medical Working Party and nuclear casualty advisor for J-4 Medical, both in Brussels, Belgium.

Jarrett has authored various publications, presentations, videotapes, and CD-ROMs including the Medical Effects of Ionizing Radiation Course book; the Medical Management of Radiological Casualties Handbook; the NATO Handbook on the Medical Aspects of NBC Defensive Operations, Volume 1; and the Medical Effects of Ionizing Radiation CD-ROM.



Alumnus Named Department Chair

Andrew J. Satin, M.D. ('86), was named chair of the USU Department of Obstetrics and Gynecology in September following a nationwide search.

Prior to his selection, Satin, an Air Force colonel, served as professor and vice chair of the department and as program director of the uniformed services residency in obstetrics and gynecology. He is currently a member of the Editorial Board of Obstetrics and Gynecology, the premier journal of his specialty, and an Examiner for the American Board of Obstetrics and Gynecology. He is certified by the American Board of Obstetrics and Gynecology and by its subspecialty Division of Maternal Fetal Medicine.

Satin succeeds Douglas R. Knab, M.D., and William H.J. Haffner, M.D., as the third obstetrics and

gynecology department chair. Knab, who simultaneously served as associate dean for graduate medical education, retired in 1992. Haffner will retain his position as professor of obstetrics and gynecology and will lead and further advance the faculty development program for the department, as well as continue his teaching and clinical care activities. Haffner is currently the secretary-treasurer of the Association of Professors of Gynecology and Obstetrics, chair of the American College of Obstetricians and Gynecologists' Committee on Health Care for Underserved Women, and chair of the curriculum committee for the Department of Defense-Department of Health and Human Services reconstruction of the Rabia Balkhi Hospital, Kabul, Afghanistan.



AMA Presents Foundation Leadership Awards

The American Medical Association Foundation presented its first annual Excellence in Medicine Awards recently and four physicians with ties to USU were among the recipients.

Air Force majors Joshua S. Rotenberg and **Daniel Shoor**, Army lieutenant colonel Richard Malish, and former Navy lieutenant commander Steven Hudson were among the 52 doctors and 25 medical students selected for the inaugural annual award program which recognizes students, residents, fellows and young physicians nationwide who have demonstrated non-clinical leadership in medical arenas, civic organizations, and community service organizations.

Rotenberg is a fellow in child and adolescent neurology at Walter Reed Army Medical Center and an assistant professor in USU's neurology department. He is a founding member of "The Working Group on Chemical and Biological Terrorism" in the Department of Pediatrics at Walter Reed and is recognized as a national authority on nerve agent exposures in children. As a resident and a medical student, he represented his peers on committees examining medical ethics, medical education and community relations.

Shoor ('96) recently completed aerospace and occupational medicine residency programs at the U.S. Air

Force School of Aerospace Medicine, Brooks City-Base, San Antonio, Texas, and is now assigned to McGuire Air Force Base, N.J. He has provided medical support for troops around the globe throughout a number of worldwide deployments, including operations in Kosovo and Iraq.

Malish ('93), who is now completing a cardiology fellowship at Walter Reed Army Medical Center after a three-month deployment to Iraq as the 173rd Airborne Brigade surgeon, was chosen under the "Young Physicians" category of the award for his efforts in creating a new combined aid station that functions like a troop medical clinic while assigned to the U.S. Army Health Clinic in Vicenza, Italy.

Hudson ('94), who also holds a law degree, recently completed his ophthalmology residency program at the Medical University of South Carolina in Charleston. He is an active member of the American Medical Association and the American Bar Association. Prior to his residency program, Hudson served as a Navy flight surgeon with HMX-1, the Presidential Marine Corps helicopter squadron in Quantico, Va., where his responsibilities included aeromedical support for presidential missions worldwide.



USU a Major Contributor in Biodefense Research

USU is part of a Middle Atlantic region university consortium that was recently selected as one of eight Regional Centers of Excellence (RCE) for Biodefense and Emerging Infectious Diseases Research in the nation.

Health and Human Services Secretary Tommy G. Thompson announced in early September the establishment of the eight centers, which were awarded close to \$350 million in grants for a five-year period.

Alison O'Brien, Ph.D., professor and chair of the Department of Microbiology and Immunology, Christopher Broder, Ph.D., assistant professor of microbiology and immunology, and Capt. (Dr.) Gerald V. Quinnan, professor and chair of the preventive medicine and biometrics department, are the participating investigators from USU. They help make up the 60-plus scientists in the Middle Atlantic RCE who will serve either as investigators, co-investigators or collaborators. O'Brien is also one of five members on the Middle Atlantic RCE Executive Committee, which will provide senior coordination to the RCE.

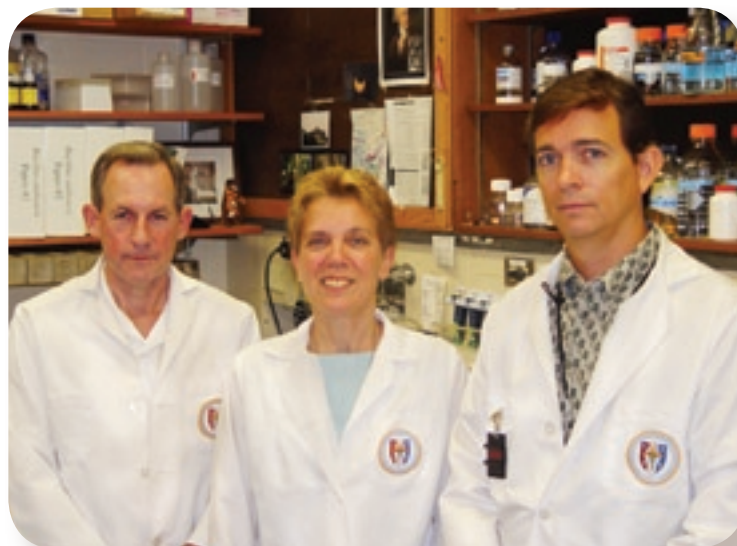
Quinnan explained that USU is one of the major components of the Middle Atlantic RCE. "We will be doing research, be represented on the Executive Committee, and be involved in all aspects of the RCE activities. This is a chance for the university to be part of the leadership in biodefense research; a chance for us to grow and develop this research on the prevention, treatment and diagnosis of diseases caused by bioterrorism agents as well as agents of emerging and infectious diseases, with particular emphasis on the most dangerous Category A biodefense agents."

The research projects of the Middle Atlantic RCE examine the biology and the immunology of, as well as develop therapeutics and vaccines for, anthrax, hemorrhagic fever and other emerging viruses including Henipaviruses, Bunyaviruses, West Nile, Ebola and Marburg, poxviruses, tularemia, and low-dose enteric pathogens.

The National Institute of Allergy and Infectious Diseases of the National Institutes of Health is providing the grants and will administer the RCE program.

The RCE program's primary role is to foster the physical and intellectual environments in which wide-ranging research on infectious diseases can proceed productively and safely, according to NIH officials.

Besides USU, the Middle Atlantic RCE includes Drexel University, Georgetown University, George Washington University, Johns Hopkins University, University of Maryland Biotechnology Institute, University of Maryland School of Medicine (the lead institution), University of Missouri, Kansas City, University of Pennsylvania, University of Pittsburgh, University of Vermont, University of Virginia, Virginia Bioinformatics Institute, Virginia



Commonwealth University, Virginia Polytechnic Institute and State University, and West Virginia University.

"We are delighted to be a part of this partnership," said USU President James A. Zimble. "This is a way of getting synergy from all of the prestigious universities and the various research minds that will be available to direct toward work in biodefense.

"We have three stellar investigators who have offered research proposals that fit within the categories and standards established for the regional centers of excellence," Zimble noted, adding that conducting this research on the school's campus is a great benefit for the university. "Research means learning and learning means being better prepared for the future to take care of our troops and the nation."

University Commended by Middle States

In 2001, in preparation for its periodic reaccreditation site visit by the Middle States Commission on Higher Education, USU initiated an internal institutional self-study. The university has been accredited by the Middle States Commission since 1984.

The Commission is the unit of the Middle States Association of Colleges and Schools that accredits more than 500 degree-granting colleges and universities in the Middle States region. It is dedicated to educational excellence and improvement through evaluation and accreditation. Its members are located in Delaware, the District of Columbia,

U.S. News & World Report Ranks USU Graduate Program in Top Six

USU's public health program, with its emphasis on community health, ranks sixth in the nation according to *U.S. News & World Report's* 2004 rankings of "America's Best Graduate Schools."

"We are very proud of our graduate programs in public health that emphasize a systematic approach to problem solving using the best available scientific tools. Our faculty, alumni, and students work very hard on global issues like humanitarian assistance and protecting the health of our deployed troops. It's a wonderful compliment to be recognized for our efforts," said Col. Gary Gackstetter, public health program director.

USU's program ranked just below Tufts University, Medical College of Wisconsin, Northwestern University, Oregon State

University, and the University of Rochester on the list of the top 10 community health masters or doctorate programs.

"This well deserved recognition of our graduate program in public health reflects the talent and commitment to excellence of our faculty and students. We continue to build and strengthen each of our masters and Ph.D. programs in the biomedical sciences and public health to serve the needs of our students and the nation," said Associate Dean for Graduate Education Cinda J. Helke, Ph.D.

Other universities on the list include the University of Colorado, University of Kansas, University of Utah, and the University of Wisconsin-La Crosse.

USU to Participate in Military Medicine Congress

The XXXV International Congress on Military Medicine will be held in the Washington, D.C., area next year, and USU has been asked to participate in its planning.

The Congress is the biannual meeting for the International Committee of Military Medicine, which is comprised of more than 100 member states and is headquartered in Belgium. The United States was one of the original eight founding member states in 1921 and last hosted the Congress in 1939.

The meeting will be held at the Crystal Gateway Marriott Hotel in Arlington, Va., Sept. 12-17, 2004, and will focus on humanitarian assistance themes. USU has been asked by Assistant Secretary of Defense for Health Affairs William Winkenwerder to help spearhead the Scientific Committee.

The main scientific topics proposed for discussion include military humanitarian assistance, infectious diseases, new

concepts and technologies in military medicine, medical preparedness and crisis response, public health and preventive medicine, and general military health and organization of medical services.

The International Committee of Military Medicine is an international organization specialized in medico-military matters. The Committee is dedicated to maintaining and strengthening the bonds between all medical services of member states, promoting medico-military scientific activities, and participating in the development of the medical and medico-military setting of humanitarian operations.

Anyone wishing further information on the scientific program of the Congress should contact the scientific committee chair, Col. (Dr.) Joseph M. Palma, U. S. Air Force, through the scientific program coordinator, Kendall Alexander, at (301) 295-3474 or via email at kalexander@usuhs.mil.

Commission

Maryland, New Jersey, New York, Pennsylvania, Puerto Rico, the U.S. Virgin Islands, and other locations overseas.

Accreditation reflects the judgment of the Commission that an institution has an established mission that is appropriate to higher education; is guided by well-defined and appropriate goals; is substantially accomplishing its mission and goals; routinely assesses its effectiveness and uses the results for improvement; and meets the eligibility requirements and standards of the Commission.

The university was evaluated onsite by a Commission team for four days this spring. In June, President Zimble received

formal notice that the Commission acted to reaffirm the accreditation of USU, commending the institution for progress to date and for the quality of the USU self-study report. Commendation from the Commission is a rare action, and reaffirmation without conditions indicates there are no current issues of concern requiring monitoring prior to the Commission's next periodic review in 2008.

The Commission also requested Zimble's permission to add the USU self-study report to its resource room as a model to assist other institutions beginning their own self-study process.



Throughout Iraq, the Middle East, and all along the patient evacuation routes back to Germany and the United States, USU alumni are doing what they do best





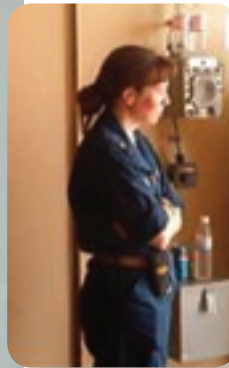
Caring for Those in Harm's Way



Television sets across America documented the first moments as the U.S. went to war with Iraq. As bombs were dropping on Baghdad, convoys of tanks, trucks, Humvees, and other military vehicles were making their way across the desert sands from their staging areas in Kuwait to the Iraqi capital and other strategic locations. Over the course of the next two months, heavy fighting claimed the lives of over 100 American service members, and numerous others suffered injuries, some of them debilitating.

President George W. Bush declared an end to the major combat phases of the war on May 1. Since that date, hundreds more soldiers have fallen victim to illness, accidents, rocket-propelled grenade attacks, bombings, improvised explosive devices and other hazards of war.

Steaming to Assist



As an orthopaedist specializing in hand surgery, Lt. Cmdr. (Dr.) Patricia McKay was likely high on the list of medical officers going to war; however, the USU class of '93 graduate was still on maternity leave, having given birth to her daughter nearly four months earlier. On the final day of her leave, McKay was notified she would be among the 1,200 physicians, nurses and corpsmen needed to staff the hospital ship, USNS Comfort.

The Comfort, a converted oil tanker commissioned in 1987, had left its homeport of Baltimore, Md., in January, manned only by its Military Sealift Command-run civilian crew and a small Navy medical contingent.

McKay said goodbye to her family and boarded a bus that took her and the other Comfort staff members to Baltimore-Washington International airport for a flight to a destination that had not at that point been revealed to them. Once on board a Continental Airlines jet, the group was told they were headed to Bahrain, in the northern Persian Gulf, where they ultimately met the ship.

The first few weeks on board, McKay said, were spent “getting ready” – conducting lifeboat drills, practicing carrying stretchers and evacuating patients, receiving smallpox and other vaccinations, and familiarizing themselves with CBR (chemical, biological, radiological) gear.

The staff was assigned eight to a stateroom. They had access to telephones and electronic mail while on board.

“Being able to communicate with your family is unbelievable,” McKay said. “I don’t think in the history of armed conflict people have been more connected.” After an initial delay, they were also able to receive letters and packages from home.

McKay said anything coming onto or going off of the ship had to be transported via helicopters including patients, among them Iraqi civilians.

“You can’t go to war and not have civilian casualties,” she said. “Anyone who has been to a military history lecture [at USU] knows that this is the inevitable part of going into battle, and so I wasn’t completely surprised that we had civilians onboard. But you’re never completely prepared to deal with orphan children and families that are in that condition.”

The medical crew onboard the Comfort was besieged with patients during the heaviest phases of combat. The orthopaedic service, which McKay said was the largest single service of the surgical departments, had nine surgeons, two of whom were borrowed from other U.S. Navy amphibious vessels to help augment the staff when they “were so busy we could barely see straight.”

“One of the most wonderful things that came from this [deployment] was a sense of working together. You learn that at USU, but I can’t stress it enough. We had primary care docs who sat with us during daily rounds. We didn’t have students or residents we rounded because we needed to know each other’s patients. We needed to step in for each other while somebody was in the O.R. We needed to give people a day off once in a while. We needed to be able to know what was happening with the whole service all the time, and we learned a lot from that,” McKay said.

At any one time, she said, most of the orthopaedic surgeons had 20 patients. Primary care staff responded to ward calls all day long while the surgeons operated. Two of the orthopaedic surgeons were from the Naval medical treatment facility in Newport, R.I., one from Jacksonville, Fla., one from San Diego, two from Portsmouth, Va., and three from the National Naval Medical Center in Bethesda, Md. “They were people

you [the surgical team members] don’t see every day and you just have to come together and do the best you can,” said McKay.

The other surgical specialties were very busy as well, but McKay said they stepped in to take care of skin grafts and extremity wounds that did not specifically involve “bony problems” because “we just couldn’t take care of every soft tissue wound involving an extremity.”

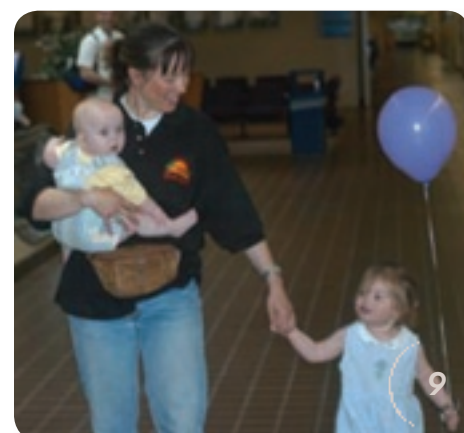
During their 56 days in the northern Persian Gulf, McKay said they handled over 600 surgeries, including 350 inpatients. Seventy percent of all the surgeries were orthopaedic in nature, and 70 percent were surgeries conducted on Iraqi patients. The types of injuries seen were what the staff expected: extremity injuries, blast, penetrating injuries, shrapnel and infection.

The Comfort had a 50-bed trauma bay, staffed by nurses and corpsmen. The intensive care unit was initially separated into three sections: one for U.S. service members, one for Iraqis, and the third for burn patients; but later the burn section was turned into an isolation ward for infection control purposes. The ship’s wards were 72-bed open bay areas. Enlisted and nursing staffs worked eight- to 12-hour shifts, often up to seven days a week. “They were working very hard and learning a lot,” McKay said. “It was a great opportunity for us [the surgeons] to help nurture them and bring them along.”

In June, the Comfort staff returned home to cheering crowds filled with anxious family members, among them McKay’s husband and children. “Nobody can ever tell you that if you’re a military physician you won’t deploy. It’s not easy. I wouldn’t pretend that it was,” McKay said. “But to tell you the truth, I think my husband is a better father for it.

“[When you’re deployed] you don’t have time to feel sorry for yourself because you’re taking care of kids who don’t have parents anymore, and you’re shoulder to shoulder with other folks with kids they’ve left behind. You’re just grateful that your own kids are in a safe place, in a country that’s got freedom and security.”

Sharon Willis



Improving the Health and Welfare of a Nation

The 250th Forward Surgical Team (Airborne) deployed to Iraq via an airborne assault and subsequent air-land at Bashur Airfield in support of the 173rd Airborne Brigade, which is based in Vicenza, Italy. USU alumni Lt. Col. (Dr.) Harry Stinger ('85), Lt. Col. (Dr.) John Scott ('90), Maj. (Dr.) John DeVine ('95), Maj. (Dr.) Richard Malish ('96), and Capt. (Dr.) Bob Holland ('97) were among those parachuting into the country. Joining them on the ground were USU graduates Lt. Col. (Dr.) Robert Rush ('90) and Capt. Gregg Hann (GSN '01).

The brigade moved on to the oil-rich city of Kirkuk and, after experiencing minimal casualties during the heaviest phases of combat, the team transitioned quickly to stability operations. Since then, according to Rush, the 250th, under Stinger's command, has been a "civil affairs machine" by day and a front-line surgical unit by night.

of the organization's establishment. While ethnic differences in Kirkuk run deep among some of the people, the physicians are working hard to overcome this in their realm. The Iraqi physicians are also in the process of forming their own union within the city and region.

A major factor in the reconstruction of the medical community was the re-ignition of medical education. Several courses were initiated at three different teaching hospitals in the area targeting staff physicians, residents and nurses alike.

A primary focus of the 173rd was reinstatement of basic services for the people of Kirkuk. One of the most important projects was reconstruction of the police, fire and ambulance services. Members of the 2/503 Infantry Battalion aid station, in conjunction with the 250th FST, revamped Kirkuk's emergency medical services by providing pre-hospital trauma



Civil affairs became a major priority in Iraq once major combat operations ended, Rush said. "Everyone in the 173rd became an expert at the reconstruction process. The civil affairs mission of the 250th FST consisted of several avenues of approach: 1) establishing a liaison with the local Iraqi surgeons; 2) developing a medical and surgical society for the professional staffs of hospitals and clinics in Kirkuk and neighboring Sulamaniya; 3) re-starting surgical education programs at the major teaching hospitals; and 4) revamping the emergency medical system of Kirkuk."

Surgeons, nurses and medics of the 250th FST have been operating with local physicians and hospital surgical staffs since May. Over 200 cases were performed in this joint fashion varying from simple hernias to complex hydatid liver and lung cases. "The cooperation has been extraordinary," Rush said. "While they lack the latest in modern equipment, the technical and diagnostic capability of most of the Iraqi surgeons is superb."

The Iraqi-American Medical and Surgical Society was formed to boost morale and cooperation among local surgeons and their American counterparts. Many meetings and academic exchanges have blossomed from the creation of this society and, Rush said, lasting friendships were formed as a result

life support courses for over 150 paramedics, nurses and technicians. "Several practice scenarios were done for real-time evaluations," Rush said. "The Iraqis were exceptional at navigating through crowded streets and had scene response times of five minutes or less to most sites within the city."

Once on the scene there were mutual exchanges of techniques and practices between U.S. and Iraqi personnel, Rush continued. Equipment, uniforms, radios and identification badges were also provided to the Iraqis through the use of international and American donations.

The 250th FST also excelled at performing their prescribed wartime mission, according to Rush. While some units of the 173rd were stabilizing the city through a massive civil affairs campaign, the rest of its Task Force Bayonet was out in the countryside trying to locate Ba'ath party members and imported terrorists from surrounding countries. These maneuvers produced casualties primarily at night as the units involved came into contact with the enemy resistance. The 250th team performed over 30 life- and limb-saving surgeries during this period of combat support, a relatively small number, Rush said, "but for the men and women of the Task Force Bayonet every case counted."

Sharon Willis/Lt. Col. Robert Rush



Protecting the Fighting Force

As a Navy public health officer, Cmdr. (Dr.) S. Scott Sherman ('91 and MPH '95) was deployed to Iraq to command the 12-member Preventive Medicine-Mobile Medical Augmentation Readiness Team 5 (PM-MMART 5). The team, which the Navy now calls a Forward Deployable-Preventive Medicine Unit (FD-PMU), was charged with identifying and eliminating any sources of communicable disease, occupational illnesses, and other health hazards that might otherwise harm Marines and sailors deployed in the region.

The Navy sent three PM-MMARTs to Iraq to support the public health requirements of its fighting forces. Sherman's team was based in the central Iraqi city of Ad Diwaniyah and was made up of a preventive medicine officer (Sherman), an industrial hygiene officer, environmental health officer, an entomologist, microbiologist, an enlisted advanced laboratory technician, and six enlisted preventive medicine technicians. The team's capabilities also included analyzing a wide variety of chemical, biological and radiological warfare agents. The other two PM-MMARTs set up operation in southern Iraq and Kuwait, based on recommendations from medical and Marine Corps operational staffs.

Prior to their deployment, Sherman's team spent months researching and collecting information on potential and known public health threats troops might come into contact with in Iraq. Once in-theater, their presence was invaluable.

"Team 5 was a great asset to us," said Navy Capt. (Dr.) Joel Lees, the 1st Marine Expeditionary Force (I MEF) surgeon at that time. "They were able to rapidly tackle some potentially important public health issues for us and get good advice out to the commanders and their medical staffs in time to help keep the problems minimal."

A few of the "problems" the team encountered soon after their arrival in Iraq included diagnoses of shigella, malaria and norovirus, a virus that causes acute gastroenteritis in humans. "We concentrated on preventing or mitigating that subset of medical issues that can rapidly degrade the combat power of the Marines," Sherman said. "Because of our range of expertise and specialty equipment, we get involved in a very wide variety of medical issues that have the potential to cause acute disease or are of concern for chronic exposures." Operation Iraqi Freedom marked the first deployment of diagnostic capability for public health surveillance in support of forward-deployed Marine forces, said Sherman.

Flies and mosquitoes proved to be another problem for the troops in Iraq. Sherman's team offered mosquito control operations and provided fly bait to the Marines for use in latrines and other areas. They also offered expertise on placement of showers and latrines in camp, recommendations for making places livable, and advice on hazardous materials handling and disposal.

Sherman said that environmental baseline surveys are conducted on any coalition camps occupied in excess of 30 days. Field analysis is done on air, soil and water samples from the camps, which are then sent to the U.S. Army Center for Health Promotion and Preventive Medicine for further evaluation. These measures are all taken to ensure comprehensive force health protection for deployed personnel.

After returning from Iraq to his position at the Navy Environmental and Preventive Medicine Unit No. 5 in San Diego, Sherman transferred to Camp Pendleton, Calif., where he now serves as the 1st Force Service Support Group surgeon, working closely with Capt. (Dr.) Eric McDonald ('85), an emergency physician assigned as the new I MEF surgeon.

Sharon Willis/Cmdr. Scott Sherman

Taking Care of Our Troops' Mental Health

Lt. Col. (Dr.) Kris Peterson ('91) is chief of child and adolescent psychiatry at Madigan Army Medical Center. In January, Peterson was sent, through the Army's Professional Filler System (PROFIS), to the 98th Combat Stress Control medical detachment of the 62nd Medical Brigade based at Fort Lewis, Wash., along with two of his Army colleagues, Capt. Michael Cole ('97), also assigned to Madigan, and Capt. Robert Cardona, from Fort Sill, Oklahoma. Several months later, the team was deployed for Operation Iraqi Freedom.

As senior psychiatrist for the 98th CSC, Peterson's role was to provide combat stress control and mental health support to troops assigned to the 101st Airborne Division in Mosul, Iraq. According to Peterson, the 98th CSC has had numerous support missions beyond those of a typical CSC unit, including direct support for the 21st Combat Support Hospital for inpatient consultation, treatment of psychiatric casualties on an inpatient basis, mental health problems on an outpatient basis, and command consultations. Staff members also filled in for the 101st Airborne Division mental health personnel when they were short-handed, and offered combat and deployment stress control and prevention.

"The 98th CSC is an excellent group led by an outstanding commander, Maj. Edward Brusher, and first sergeant, Sgt. Christine Gallagher. We traveled across most of Iraq, from Kuwait to Mosul," Peterson said. Peterson also noted that "the majority of the 98th is still deployed and will be for about a year." Current clinical operations are being directed by Cole and Cardona.

According to Peterson, while he was in Iraq the team cared for soldiers with a variety of needs. Many exhibited symptoms of stress due to the fighting, from seeing injuries and death, and

from family separation, while others were seen for first onset psychotic breaks, major depressive episodes, anxiety disorders, and personality disorders. Overall, most cases were those who had normal reactions to stress, and difficulties dealing with deployment and the strain of combat.

Working within the combat theater of operations, members of the 98th CSC themselves came under fire a couple of times. On one occasion, Peterson said, the group encountered hostile fire while on the road. Several times they faced small conflicts with non-combatants, and Peterson said, incidents of hostile fire occurred and continue to occur in their work area of operations, with mortar and small arms fire occasionally.

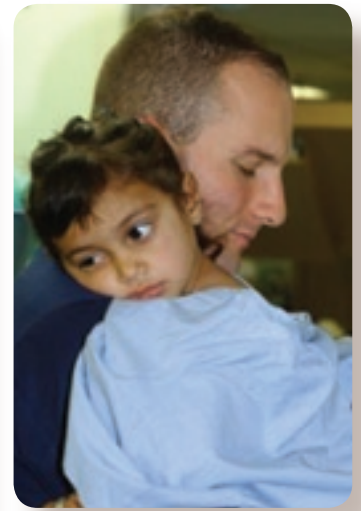
"Thankfully it has not been accurate or lethal," Peterson said. But one incident, in particular, stands out in his mind. "The ammunition depot nearby exploded and continued to explode for over three hours sending shrapnel over our encampment for a good part of the day."

Working conditions for the 98th CSC have been austere and often challenging. During the summer, Peterson said, their treatment tent would reach temperatures in excess of 120 degrees. But, he said, the living situation continues to improve and they all believe their mission is "an excellent one."

In fact, Peterson is concerned that "the media has missed the tremendous success thus far and the desire of most Iraqis to see the U.S. stay the course." He says the majority of Iraqis are more concerned that the U.S. will leave too soon rather than not leave, a testament to what Peterson calls "the excellent caliber of soldiers, their endurance and willingness in the vast majority to do a difficult duty."

Sharon Willis/Lt. Col. Kris Peterson





A Nurse in the Trenches

Army major Jack Davis graduated from the USU Family Nurse Practitioner program in 1999, but is currently assigned to Camp Anaconda near Balad, Iraq, in what is referred to as the “Sunni Triangle.” Davis is the brigade surgeon for the 17th Field Artillery Brigade from Fort Sill, Okla., and is likely the first family nurse practitioner to ever serve in this capacity.

Prior to coming to USU, Davis was the officer-in-charge of the Army health clinic in Yuma, Ariz., with a stint in the surgical/trauma intensive care unit at Brooke Army Medical Center in San Antonio, Texas, before that. However, Davis began his military career in armored (tank) units and with special operations forces, making him more than qualified for his assignment with the 17th Field Artillery Brigade.

Davis’ duties as brigade surgeon include serving as a special staff officer to the brigade commander, keeping him informed of all medical aspects of brigade operations. He is also responsible for the supervision and training of all medical resources in the brigade that currently include four physician’s assistants and 60 medics.

After the cessation of formal combat operations in Iraq, the 17th Field Artillery Brigade’s mission became largely one of restoration. The brigade is heavily involved in civil affairs projects – something Davis says his commander is passionate about. “He feels that each time we touch an Iraqi civilian’s life through our work, every American soldier becomes that much safer. I think he’s right,” said Davis.

In addition to his other duties, Davis got involved in working with and advising his commander on issues related to the health and safety of the Iraqi civilian community. He works on initiatives designed to improve the safety of local drinking water, screens children for developmental delays and provides health care to Iraqi civilians through the Medical Civil Affairs Program (MEDCAP). “Since I have been here, the brigade has refurbished five schools, erected new electrical towers, rebuilt an irrigation pumping station and laid enough pipe to provide 83,000 people in 11 different villages with clean drinking water,” Davis said.

As in many countries with limited healthcare resources, Davis said, parents swarm the American medical providers asking for help with healthcare needs for themselves and their children, with problems ranging from eczema to acute ear infections. Sadly, he said, many of the children have suffered severe injuries from unexploded ordnance and shootings. Children often gather unused ammunition to salvage the brass casings, and become wounded in the process when the ammunition detonates, causing any number of injuries, from loss of digits to death.

“One lucky seven-year old boy kept the use of his index finger and thumb thanks to the skills of an American orthopedic surgeon in the 21st CSH,” Davis said. “Follow-up is difficult and maintaining a clean environment is impossible; most of these people are farmers and live in homes made of adobe with dirt floors. This little boy was fortunate in many ways; we arranged for him to come back daily for follow-up and he has had a good outcome and is back to playing with his seven siblings.”

According to Davis, his role as brigade surgeon during Operation Iraqi Freedom has been simultaneously challenging and extremely gratifying.

“I am honored and thankful to have been given the opportunity to serve.”

Sharon Willis/Maj. Jack Davis

21st C* S* H*

The 21st Combat Support Hospital is one of the busiest medical facilities in Iraq, with casualties of war streaming in on a daily basis.

The hospital, commanded by Col. (Dr.) Doug Liening ('85) and staffed by a number of USU alumni including Col. (Dr.) Bob Lyons ('83), Lt. Col. (Dr.) Trip Buckenmaier ('92), Maj. (Dr.) Scott Earwood ('95), and Maj. (Dr.) Stephanie Redding ('95), is actually divided into two facilities. "Bear South" is located at LSA (logistical support area) Anaconda, near Balad, Iraq, and is a series of interconnected tents. "Bear North," the second facility, is located in Mosul, north of Baghdad.

"We are an 84-bed hospital with two intensive care units, two intermediate care units, and a medical hold ward. We have three operating tables. We have an emergency room and an outpatient clinic. We have x-ray, laboratory, and pharmacy," said Redding, a family physician normally assigned to Ft. Hood, Texas, who is working out of Bear South. "We have a physical therapist and nutritionist. We have physicians of various specialties. We have nurse practitioners. We have community health nurses. We have medics, practical nurses and registered nurses. We have respiratory therapists."

The hospital staff also includes medical maintenance, supply and patient administration personnel as well as staff for food service, laundry and those who help provide showers for the patients, motor pool personnel for hospital vehicles, fuelers for vehicles and generators, mail handlers, and administrative personnel.

Redding said the 21st CSH provides inpatient and outpatient care to troops in Iraq, and also cares for wounded enemy prisoners of war and civilians injured by the fighting.

Redding is assigned to the 21st CSH as a PROFIS physician. She received orders to join the unit in late February, and after a month's preparation, the CSH left for Kuwait. Redding spent the next month at Camp Victory in Kuwait, readying for movement into Iraq. While the unit was awaiting orders there she and the other hospital staff members helped provide sick call – under constant SCUD missile alerts – for the camp's transient troops.

The mobile hospital staff arrived at LSA Anaconda after a three-day convoy in back of five-ton trucks. They set up the emergency room (EMT) and intensive care unit within 48 hours of arrival and had a fully functional hospital within 72 hours. "We have been providing both inpatient and outpatient care to troops in Iraq, including injured enemy prisoners of war and civilians injured by the fighting ever since. We see from 30-100 outpatients per day between specialty clinic and EMT."

Redding is the officer-in-charge of the hospital's specialty clinic, providing sick call to a portion of the 16,000+ LSA Anaconda soldier population and specialty consultation to troops from all over Iraq. The clinic has also functioned as the overflow for the



emergency room during mass casualties, a minor operating room for shrapnel removal during events like the United Nations staff bombing, a blood donor center when large amounts of whole blood were needed for a patient, and a morgue prior to mortuary affairs arriving. The primary care team consists of two general internists, two family physicians, and one family nurse practitioner. Redding said they all cover sick call, specialty consultations, medicine inpatient service, emergency room shifts, and assist in mass casualty events as needed. They were also involved, she said, in field-testing CHCS-II-T, a computer medical record and ordering system.

The staff at Bear South has been working with the local Iraqi hospital in Balad to increase their ability to care for patients, she said. "We are helping them rebuild and refurbish their facility. We are helping them get new equipment that they need to care for their patients. Additionally, we have established a relationship that allows us to transfer Iraqi patients to them after we have stabilized the patient."

Redding counts her deployment with the 21st CSH as a positive experience. "As a soldier and a physician, I am happy to come and serve my country," Redding said. "I am glad I had the knowledge and skills to take care of soldiers in this austere environment. My training at USU, my experience as a flight surgeon at both the battalion and brigade levels, my residency training in family practice, and my year in Korea have all helped to prepare me for this.

"No one can really know how he will be affected by such a deployment until after he has lived through it and had time to reflect on it. I know this has changed my life forever."

Sharon Willis/Maj. Stephanie Redding

Rapid Response to Hotel Bombing

Maj. (Dr.) Erik Koda ('94) is a family physician assigned to the Pentagon's Air Force flight medicine clinic, 11th Medical Group. The clinic's staff, under the command of Col. (Dr.) John Baxter ('89), provides medical support to Defense Department leadership so it was not unusual that Koda accompanied Deputy Secretary of Defense Paul Wolfowitz on a three-day mission to Iraq in late October.

After a visit to 4th Infantry Division troops in Tikrit, the delegation traveled to Baghdad, where they joined many other American officials staying at the Al Rasheed Hotel. Shortly after 6 a.m. on an otherwise quiet Sunday morning, the hotel was hit by a barrage of approximately 8-10 rockets, killing one U.S. soldier and injuring four military staff members, seven American civilians, two security guards, and four foreign nationals.

Pajama-clad residents of the Al Rasheed fled out of the hotel following the attack, while medical personnel rushed in to tend to the wounded. Inside, Koda, whose room was on the floor above one of the rocket blasts and whose windows were blown out, immediately went to work.

"Some of our staff had taken cover in the hallway by that time and missed that blast by about one minute. I saw the smoke from the blast pass through the cracks in my closed hotel door,"

Koda said. "Once the explosions ended, I grabbed my ASLS/ATLS trauma backpack and a check of the DSD's (Deputy Secretary of Defense's) safety was done. He was not injured. A check was made to see if any of our delegation was injured and none were. At that point in time we evacuated down the stairs through a light amount of smoke caused by small fires."

At the designated rally point in the lobby, Koda said the decision was made to stay at the hotel, so he began treating casualties. "Had the delegation chosen to bug out," he said, "my duty would have been to stay with them in case of emergency medical needs."

Koda's first-encountered casualty was a British man who demonstrated intact breathing and circulation, but who had suffered shrapnel wounds to his face and trunk, testicle loss, and multiple feet lacerations. Koda left him to check for patients needing more immediate attention, while a nearby medic dressed the wounded man's injuries and transported him by litter to an ambulance staging site. In his search for more seriously injured victims, Koda said he bypassed several walking wounded and pointed them toward the ambulance area.

Koda joined other medical personnel already working to stabilize a U.S. Army colonel with no breathing or circulation, who had suffered head trauma and whose hand had been amputated. He was intubated, his wounds dressed and he was evacuated to the 28th Combat Support Hospital about one mile away, where he later died.



Koda made a check for additional casualties, but found none. He treated one patient later for mild smoke inhalation and another for panic symptoms before making a visit to the 28th CSH. There he checked in on the attack victims, including the injured British man who was awake and stable.

Later, the delegation received information that the multiple rocket-launcher had malfunctioned and that 11 more rockets intended for the hotel never fired. An identical device was defused by U.S. explosive ordnance disposal personnel minutes before its timed launch directed at the Al Rasheed.

Army Maj. Gen. William B. Caldwell, IV, the senior military assistant to the deputy secretary, praised Koda for his "tremendous support" following the attack.

"He immediately jumped in and began treatment on the 18 wounded persons. He was calm and very deliberate," said Caldwell, who was a member of the delegation staying at the Al Rasheed Hotel that day. "Thanks from us, and especially from those wounded in the attack, because they directly benefited from his quick and decisive medical treatment."

Koda does not consider his role in the rocket attack aftermath heroic. "I'm just doing what I'm supposed to do," he said. "There is a whole hospital (the 28th CSH) of Army personnel who were there that day and who have been doing this out there since the war started."

"I would say, though, that I never felt at all unprepared or anxious about the situation. I truly attribute this to the training and exercises that I went through from my U.S. Air Force Academy days during the attack portion and to my USUHS days for the mass casualty portion."

"It felt just like any other exercise," said Koda. "Very much like training that we did at Quantico during medical school."

Sharon Willis/Maj. Erik Koda

Putting Principle into Practice

Among the service members deployed to Iraq and other parts of Southwest Asia in support of Operation Iraqi Freedom were USU faculty members Maj. (Dr.) Troy Johnson ('95) and Lt. Col. Kevin Riley, who both volunteered their medical and support skills for the war effort.

Besides lending their talents as a military physician and a medical support officer, respectively, the two saw this as an opportunity to validate the university's curricula for training military medical officers.

Johnson, an assistant professor of military and emergency medicine, spent three months in-theater with U.S. Special Operations Command forces. He served as a battlefield physician during the war and treated a number of U.S. and coalition combat and non-combat casualties, as well as Iraqi citizens.

Johnson said he had been in many operations as a general medical officer with special operations forces after graduation, but this was his first experience in a wartime environment.

He was prepared in terms of expectations, resources and needs based on the knowledge he had gleaned from USU – both as a student and a faculty member.

"I knew what to expect from the combat injuries we had studied from the last four conflicts the U.S. had gone through," he said. "I had an idea of exactly what I was going to see out there and I ended up seeing it. And even more interesting is that (Operation) Bushmaster correlated very well with this operation (OIF)."

Johnson was assigned to USU in July 2002 and was tasked with revamping Operation Bushmaster, the field exercise that culminates fourth-year medical students' military medical training at USU. The Bushmaster exercise, part of the military contingency medicine course, is used to train and evaluate the medical and graduate nursing students in a simulated battlefield environment.

"My focus about going was to take what we teach at USU and see exactly how on the mark we are when we're foot soldiers on the battlefield," Johnson said. "In my experience, what we're teaching in the classroom and what I experienced on the battlefield were the same.

"I was excited out there to see that what we produce from this university truly made a difference on the battlefield," he said, noting that most of the people in his special operations group were USU graduates. "Our grads are getting, for the most part, exactly what they need for operational medicine – not just providing care in hospitals, but also treating combat wounds on the battlefield."

Riley, also an assistant professor of military and emergency medicine and former academic support director for the medical school, was deployed for six months to various parts of the U.S. and Europe, but primarily to Southwest Asia.

His first few months were spent coordinating airlift operations, medical forces, casualty reception and housing, food, water and other requirements needed to support special operations forces and their missions. By mid-February, he was deployed fulltime to Qatar as the force medical officer responsible for ensuring that medical capabilities were provided for special operations and support personnel. At the height of combat, Riley said, there were more than 17,000 coalition special operations and support forces, including American, Australian, British and Polish troops, spread over 12 countries.

Riley is grateful to the university for giving him the opportunity to deploy for Operation Iraqi Freedom, and acknowledges the university's role in his mission success during the war. "One thing that really served me best was my work with the first- and second-year students during the last couple years. The things we teach in military medicine here gave me a chance to really go over there with a mindset of what was important, what needed to be stressed. I felt way ahead of the game because of that," Riley said.

"The level of instruction our students get is incredible and it's right on," Riley noted. But from his experiences, he recommends that students be given more military medical scenario-based instruction along with the core instruction.

"One of the biggest improvements we can make is to give them an event or series of events and allow them to develop the outcome as if they were there," Riley said. "I know in some cases they may lack the experience, but we can get them to learn how to think out the process or resolution and then we show them how it was resolved. This will build confidence that, in fact, they could go out there and be good problem solvers." He added that by doing so, students would develop better operational awareness.

"It's more than just delivering medicine," Riley said. "They have to know such things as how far away are the helicopters or the next evac (evacuation) line, and where does the blood come from. They also need to know how to promote strong preventive medicine to reduce diseases and non-battle injuries, how to ensure good training programs so that frontline medics are provided with the skills and equipment they need to treat combat casualties, and how to project needs for far-forward surgical intervention and resuscitation capabilities."

Riley also added, "we need to teach them to become stronger and more definitive in giving guidance and advice to line commanders. They're not only physician-providers, they are also physician-managers, planners and advisors.

"We can't expect them to recall it all, but if they can recall some of it, even at a fundamental level, that will give them just enough of an edge to make them more adaptable," Riley said.

"Adaptability and flexibility are the keys to success on the battlefield."

Master Sgt. Ann Bennett, USAF



Repairing Lives and Limbs

Every week a new planeload of soldiers arrives back in the U.S., returnees from the Middle East, headed for Fort Sam Houston in San Antonio, Texas. No fanfare greets them, no “Welcome Home” signs. Only the doctors, nurses, technicians and other staff members of Brooke Army Medical Center, where these soldiers will spend the next several months undergoing surgeries for wounds suffered during Operations Enduring or Iraqi Freedom.

According to the medical center’s commander, Brig. Gen. Charles “Bill” Fox (’81), the staff at Brooke is “seeing all types of casualties, but most injuries and evacuees are orthopaedic in nature.” Fox said the staff is seeing them in increasing numbers.

Among the 10 orthopaedic surgeons at Brooke, half are USU graduates – Col. (Dr.) Mark Bagg (’85), Lt. Col. (Dr.) James Ficke (’87), Lt. Col. (Dr.) Roman Hayda (’88), Lt. Col. (Dr.) John Kragh (’89), and Maj. (Dr.) John Friedland (’93) – who are staying busy working to repair the damaged lives and limbs of the soldiers and Marines lying on their operating room tables. Friedland, chief of spine surgery, was recently sent to Landstuhl Regional Medical Center in Germany to augment the orthopaedic staff there.

The orthopaedists have performed numerous surgeries for injuries caused by rocket-propelled grenades, vehicle accidents, land mines and other means. There are amputees and those with burns, eye and ear injuries, and shattered or broken bones.

“The weapons and tactics, as well as the survivability enhanced by the use of body armor means that about 70 to 75 percent of the injuries we see out of Iraq and Afghanistan are to the extremities,” said Bagg, Brooke’s chief of orthopaedics, in an interview with the *Dallas Morning News*. “These can be very nasty wounds. But this is what we train for.”

“I think that in the historical perspective, the overall care has been extraordinarily good given the tactical situation,” said Kragh, who is the department’s director of research.

Bagg credits his colleagues on the frontlines for their work on the battlefield. “The surgeons have done an excellent job at initial stabilization of devastating and complex injuries. The successes we have at BAMC are due in no small part to the excellence of initial care.”

Col. (Dr.) David Burris (’83), interim chair of USU’s Norman M. Rich Department of Surgery and an Army trauma surgeon, said that often “the initial care on the battlefield attracts the most attention due to the location. Such care is life- and limb-saving, but the contact of the medical personnel with the patient is usually very brief. The longer-term reconstructive care often seems less glamorous, but it is this work that restores the young combatants to function in their society.”

Many of these patients will require multiple surgeries for their injuries and prolonged physical therapy. According to Burris, due to the lengthy recovery times involved, a bond can develop with the surgeons and

other hospital personnel that is deeper and richer than the fleeting connection on the battlefield.

“The central issue remains the soldiers,” said Kragh. “Especially their positivism and their sacrifices and current rehabilitation.”

Sharon Willis



Navy Surgical Support for the Marines

Over the past couple of years in the global war against terrorism, the United States Marine Corps has had a chance to apply new doctrines of Marine expeditionary warfare.

In Afghanistan, the Marines took and held a “beachhead” at Camp Rhino 400 miles away from their ships in the Arabian Gulf, and then joint forces proceeded on to Kandahar, Kabul, and the rest of Afghanistan.

In Iraq, an asymmetric, non-conventional expeditionary operation allowed the Marines to drive 450 miles from the shores of Kuwait all the way into Baghdad in less than three weeks. Counting an expedition up to Tikrit, the Marines were almost 700 miles from the shoreline. These were hardly the littoral missions for which the Marines usually plan and train.

While the Afghanistan operation was carried out by two Marine Expeditionary Units (approximately 3,000 personnel), Operation Iraqi Freedom (OIF) utilized roughly 65,000 Marines, or about two-thirds of their warfighting force. Logistical planning and support was crucial to the successful completion of each of these missions. With such rapid movement forward to distant objectives by the warfighters, it would be easy to advance past the point where logistical support is possible. Careful coordination of warfighters and logistic support was needed throughout the prosecution of each conflict to ensure that none of the warfighting units ever ran out of food, water, ammunition and medical support.

Navy Medicine is adapting to this new warfighting style. In Vietnam, Korea and even Desert Storm, echelon II surgical support for the Marines consisted of relatively large field hospitals or casualty collecting and clearing companies. This medical support had a large footprint, usually of several acres, took days to erect and take down, and might have hundreds of personnel. Patients were brought to the hospitals via helicopters in a “scoop and run” technique which allowed for shortened times between wounding and advanced medical (i.e. surgical) care. Care of this kind resulted in a major decline in the morbidity and mortality rates of battlefield injuries.

This type of surgical support is needed if fighting a “standard” war with two large ground forces battling it out head to head with little change in the battle lines, such as was planned for in most Cold War doctrines. In the 21st century, however, the U. S. Marines are fighting in a different manner, and need medical support that can set up fast, take care of casualties, and then break down rapidly to continue to follow the advancing battlefield. Surgical companies are still needed to take care of many casualties at once, and were used extensively during

OIF, but it was the Forward Resuscitative Surgery System (FRSS) concept that quickly proved itself on the battlefield.

The FRSS is an eight-person team consisting of two surgeons, an anesthesiologist, a critical care nurse, an independent duty corpsman or physician’s assistant to run preoperative triage and advanced trauma life support surveys, two operating room technicians and a general duty Fleet Marine Force corpsman. The system weighs about 6,400 pounds including food, water, shelter, generators and all of the equipment needed to handle 18 surgical patients over a 48-hour mission of continuous caring for casualties.

Five patients can be cared for simultaneously – two preoperative patients, two postoperative patients and one operating room patient. Medical evacuation of patients in a timely manner is crucial with such limited resources, and in OIF this was accomplished. The system will fit in a 997 ambulance, a 998 Hi-back HUMM-V and two M-101 trailers for transport of all equipment and consumables.

During OIF, we typically carried a re-supply block for care of an additional 18 patients and this changed the configuration of our vehicles to include a seven-ton truck instead of the 997 HUMM-V. Personnel

rode in the ambulance or in a specially configured chemical/biological protective system vehicle obtained because of the threat of chemical or biological attacks.

The FRSS can be set up or broken down by its crew in 60 minutes. In addition to standard surgical gear, the FRSS comes equipped with refrigerators to carry 80 units of blood, the ability for FAST abdominal ultrasound exams, an Agilent blood gas analyzer, special compact battery-powered fluid warmers and even a portable oxygen generator system (POGS) to cut down on the need for large H-cylinders of oxygen. The POGS on the FRSS delivers 10 liters per minute of oxygen, and at the surgical company level they had a POGS that would deliver 33 liters per minute. No x-ray capability is yet available at the level of the FRSS.

Prior to deployment to Kuwait, there were only two fully trained FRSS teams. The FRSS concept has been a work in progress with full implementation not due until 2004. The war sped things up a little. Surgical care rendered last year at Camp Rhino had been given using existing medical equipment from the surgical company using a similar concept to the FRSS. While awaiting the start of hostilities, six FRSS teams were fully trained in Kuwait using an 80-hour didactic session of lectures and seminars and 100 hours of field training on the set-up, breakdown and use of the equipment. These six FRSS teams were used extensively during the war.



— A Process in Evolution

During the training phase, half of the FRSS teams had two general surgeons and half of the teams were trained with a general surgeon and an orthopedic surgeon. In every instance during the conflict, the FRSS was attached to a Shock Trauma Platoon (STP) that provided initial triage and resuscitation of casualties and then postoperative holding capacity. The teams were sent out in direct support of the Marine warfighters in singles or pairs depending upon the anticipated number of casualties. Near An Nasiriyah, where some of the bloodiest fighting took place early in the war, FRSS teams 2 and 4 were set up and took care of the brunt of casualties until a surgical company could move forward and set up. Fleet Hospital 3 also set up in this location later in the conflict. Single FRSS teams were placed south of Ad Diwaniyah and Al Kut for missions expected to have less casualties. FRSS teams 1 and 6 followed in direct support of the Marine warfighters from the Kuwait border all the way to the outskirts of Baghdad. When two FRSS teams were paired, the mix always included an orthopedic surgeon in addition to the general surgeons for care of casualties, since orthopedic injuries were felt to be the most common anticipated injuries. Alpha, Bravo and Charlie surgical companies were also used prominently during the conflict and would follow on at many of these locations for continued surgical support with a more robust ability to deliver medical care, but the FRSS teams were always able to deliver care furthest forward and fastest. Much additional support was also given to the Marines and sailors, and enemy prisoners of war (EPWs), on the casualty receiving and treatment ships and on the USNS Comfort. All of the medical assets, including USU alumni, on these platforms should also be commended for their efforts.

Surgical care was given on the ground for active duty Marines and sailors, Iraqi adult male and female civilians, children and EPWs. The FRSS is currently designed to take care of strictly adult battlefield casualties, which meant that a lot of adaptations were needed to care for these other patients. Surgical cases ranged from orthopedic washouts with debridement and stabilization to combined thoracomy/exploratory laparotomy. A couple of patients, including one who took shrapnel from a rocket propelled grenade round through the jaw, needed

emergent airway stabilization. The FRSS can carry up to 80 units of blood for the care of 18 surgical patients or five units per patient. The highest number of units of blood any patient received at the level of the FRSS was seven. A lack of other blood products including fresh frozen plasma and platelets precludes much higher transfusion rates than this.

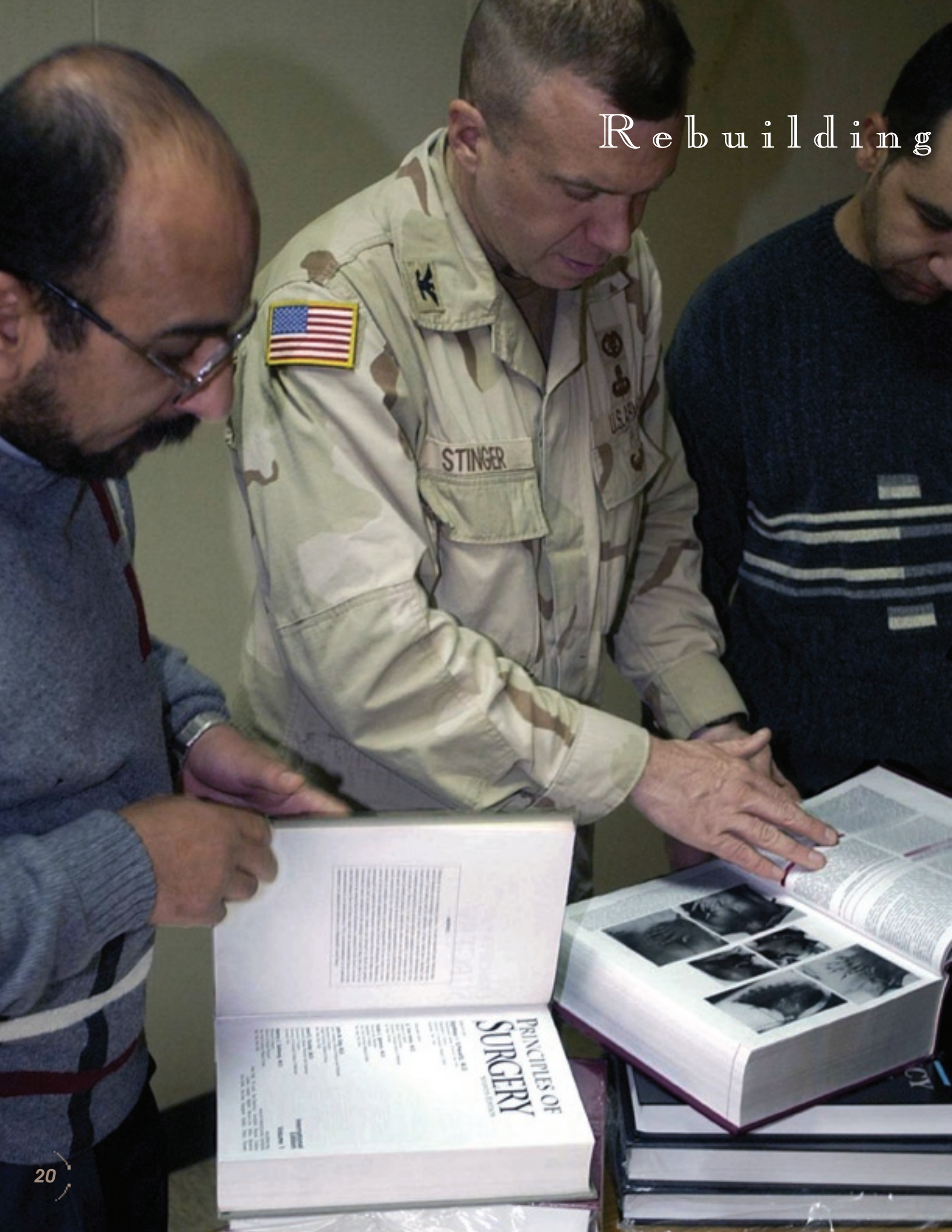
Echelon II care for Marines at the level of the FRSS or the surgical company consists of damage control surgery wherein you perform life and limb salvaging surgery to stop the hemorrhage and contamination of battlefield wounds. Operations are typically limited to one to two hours and patients are evacuated for further treatment in an expeditious manner. The main idea is to treat injuries within the “golden hour” of wounding to reduce the morbidity and mortality of these casualties. In this conflict, there was rarely an overwhelming influx of patients to any of the surgical facilities, so a larger percentage of patients received definitive care than would otherwise be expected. With the FRSS teams in place, times from wounding to treatment were often 15-10 minutes for a large percentage of patients, and this likely decreased morbidity and mortality for these patients. A number of the patients now recovering would not have survived longer transport times than they received to the FRSS units. The combined FRSS/STP concept for far forward surgical care of battlefield casualties proved its worth quite well in this type of conflict.

As Marine warfighting techniques change, so must the way Navy Medicine provides support to the Marines. Smaller, more modular surgical units that can be placed singly or joined in a task-oriented manner much like the way Marines task organize for their missions are one way that the Navy is trying to adapt. Use of the FRSS units in this conflict was not always perfect and a number of lessons learned will help the system continue to adapt, but an evolution in surgical care is occurring and will continue to do so. In this way, Navy Medicine is cruising to the front in treatment of battlefield casualties.

Cmdr. Bruce Baker, USN



Rebuilding



Iraq's Medical Schools

After President George W. Bush declared that major fighting to liberate Iraq ended May 1, many plans of action were established to help rebuild the country and improve areas set up by the old regime, including the Iraqi health care system.

U.S. Army Lt. Col. (Dr.) Kirk W. Eggleston ('90), division surgeon for the 4th Infantry Division, along with other USU alumni, has been involved with improving Iraqi hospitals and clinics within the unit's area of operation (AO).

Eggleston and his division have three objectives: provide emergency medical and humanitarian assistance, have hospitals and clinics open and operating at pre-war standards, and help restore a self-sustaining and efficient Iraqi health care system.



"Currently 96 percent of the hospitals and 93 percent of the public clinics are open and operating, and according to local health officials, we are operating at pre-war standards," said Eggleston.

"Restoring the Iraqi health care system is a very long-term goal," he said. "It includes renovating and rebuilding facilities that have suffered from years of neglect, training a skilled nurse corps and emergency medical corps, developing a more efficient system for the delivery of medical logistics, training the Iraqi health care administrators, and setting up a fair pay system that rewards workers and provides incentives for serving in hard-to-serve areas."

Eggleston also explained that the Iraqi health care system was used as a tool by the old regime to reward some people and suppress others.

"By bringing up the level of care to the 2003 level, we can have an impact on the lives of millions of individuals and show the Iraqi people that we are truly interested in their health and well-being," he said.

The 4th Infantry Division works with other units such as the 555th Engineering Brigade and the 173rd Airborne Brigade. These combined units, nicknamed "Taskforce Iron Horse," have approximately 26,000 soldiers. The taskforce is responsible for three governorates in the central portion of Iraq: Salah Ad Din, where Eggleston is located, At Tamim and Diyala.

"There are 29 hospitals and nearly 200 clinics in our AO," said Eggleston. "We have been working very closely with the Tikrit Teaching Hospital, formerly called the Saddam Hussein Hospital.

"When we first arrived at the Tikrit Teaching Hospital, it only had one floor operating out of six because of the bombing of a nearby security headquarters building, which left some of the hospital's windows blown out," said Eggleston. "We fixed all the windows, repaired their power generator, arranged for oxygen delivery and cleaned up broken glass in the areas. In less than 30 days after our arrival, the hospital was fully functional."

Eggleston also explained that he and other USU alumni have orchestrated a vaccination program in Kirkuk. So far, more than 4,000 Iraqi children have received immunizations.

"USU alumnus Lt. Col. (Dr.) John Scott ('90) was the driving force in the vaccination program along with Maj. (Dr.) Rich Malish ('96), both 173rd Airborne Brigade surgeons," Eggleston said. "We also have done grand rounds and teaching rounds as well. Lt. Col. (Dr.) Rob Rush ('90) has done a number of surgical cases with the Iraqi docs in Kirkuk."

In addition to working with the clinics and hospitals in their operating area, Eggleston said that he has also been working closely with the Tikrit College of Medicine, which is one of 13 medical schools in Iraq.

"We are trying to bring the Iraqi medical students up to date with current textbooks and journals, as well as Internet access to obtain medical information," said Eggleston.

The medical school has 600 students with 100 in each class. The library has only photocopies of textbooks because all of the original texts were retained in Baghdad and copied for the other Iraqi medical schools. There is only one bookshelf of "current" texts that are nearly four years old. All other texts in the library are three decades old on average.

Eggleston and his colleagues are helping the college obtain Internet access and have purchased eight computers for the Iraqi students so far. There are also several medical publishers who have donated subscriptions or online access to their journals. UNICEF and St. Louis University have also donated textbooks.

"Having newer and more texts, journals and Internet access will improve both the quality and quantity of medical information the students have access to," said Eggleston.

"Working with the medical school is an investment in the future Iraqi health care system," he added. "It allows our medical professionals to interact with their peers and build relationships. This will ease tensions between the coalition and the Iraqi people and hopefully speed the process of rebuilding Iraq so we can go home. In the long run, I see the relationships leading to exchange programs between the U.S. and Iraqi medical systems."

JO2 Robert Keilman, USN

Cox Grant Renewed for Twenty-Second Year

Dr. Brian Cox, professor and chairman, Department of Pharmacology, recently had his National Institutes of Health R01 research grant renewed. With this renewal Cox starts his twenty-second year of continuous funding from the NIH.

A common measure of research success at universities around the country is the length of time that an investigator has had his grant funded by one funding agency. Since most Federal agencies fund proposals in two- to five-year increments, someone who has kept a grant for a decade or more is recognized for his excellence in peer-reviewed research. When a faculty member keeps a grant over a decade, many schools recognize that as an outstanding effort and reward the faculty member for staying at the cutting edge for that period of time.

Cox's grant support has been from the National Institute on Drug Abuse and is entitled "N/OFQ Expression and Neural Injury." His research has focused on mechanisms of morphine tolerance and dependency. Both of these aspects are poorly understood despite their importance in understanding pain management and treatment of addiction. Over the years, Cox's research has focused on increasing understanding of the actions and potential therapeutic uses of opiate drugs such as morphine, and of the natural systems in the brain on which this type of drug normally acts.

The brains of humans and all mammals contain peptides that can produce effects like those of opiate drugs. These peptides include the enkephalins, β -endorphin (claimed to be responsible for runner's "high") and dynorphin. Cox is studying opioid

peptides that are present during development and that are widely distributed in discrete regions in the adult brain. The current peptide he is studying plays a role in the neural response to injury. His studies have demonstrated that this peptide and its receptor partners play a role in reducing neural cell survival after seizures and chemical injury.

Currently, Cox is attempting to identify the major products and biochemical partners in this pathway under resting conditions and to determine the relative concentrations of the biologically active molecules after seizures or other stimuli. His long-term goal is to determine the mechanism of neurotoxicity following seizure or exposure to toxins and/or drugs, hoping it will lead to novel developments of neuroprotective therapies.

"All at USU would like to thank Dr. Cox for his research and educational efforts at the University," said Steven Kaminsky, Ph.D., vice president for research. "His leadership both in the classroom and in the laboratory have been outstanding and we would like to wish him many more years of continued success."



Surgery Faculty Earn 'Best Paper' Honors

"Microthrombectomy reduces the incidence of post-sclerotherapy pigmentation. A multi-center, randomized trial," published in November 2003 in the *Journal of Vascular Surgery*, was presented in the section "The Best of the Nationals" during the Annual Congress of the Vascular Societies in Chicago in June, and was selected for presentation at the World Congress of Vascular and Endovascular Surgery in November in New York City.

Selected as the Best Paper of the Year by the Scientific Program Committee of the American Venous Forum, the leading national academic society dedicated to the study and care of patients with venous diseases, it was based on a multi-center, randomized trial of 101 patients conducted at the National Naval Medical Center and Walter Reed Army Medical Center designed to study the role of microthrombectomy (clot removal) in the prevention of post-sclerotherapy

pigmentation. Authors included USU surgery department faculty **Anke Scultetus, M.D.**, research instructor; J. Leonel Villavicencio, M.D., professor of surgery; Tzu-Cheg Kao, Ph.D., associate professor of preventive medicine and biometrics; Lt. Col. (Dr.) David Gillespie ('86), associate professor of surgery; Gary Ketron M.D., assistant professor of surgery, located at the National Naval Medical Center; Norman M Rich, M.D., chair emeritus and professor of surgery; and Sandra Eifert, M.D., Department of Cardiac Surgery, Grosshadern Ludwig-Maximilians Universitat Munich, Germany.



O'Brien NIH Grant Renewed

Alison O'Brien, Ph.D., professor and chair of the Department of Microbiology and Immunology, has received funding for the twenty-first year to continue her studies on Shiga toxin-producing *Escherichia coli* (STEC).

O'Brien was awarded \$1.9 million through a National Institutes of Health R01 grant for STEC research to be conducted over the next five years. Studies will include the epidemiology, virulence factors, and host-bacterial interactions of Shiga toxin-producing *Escherichia coli* that contribute to their pathogenicity in humans.

O'Brien is an internationally recognized expert in Shiga toxin and STECs – food-borne pathogens for which cattle are the

reservoir. Humans become infected through ingestion of contaminated beef, agricultural products and water. Infection with STEC is responsible for 100,000 cases of bloody diarrhea per year in the United States. These infections can lead to the potentially life-threatening hemolytic uremic syndrome, particularly in young children. O'Brien is credited with several seminal studies in the biology and pathogenicity of STEC.

In addition, she will continue development of novel plant-based edible vaccines for the prevention of colonization of livestock, and the protection of humans against infection and disease associated with Shiga toxin-producing *E. coli*.

Biochemistry Faculty Member Awarded Research Grants



The National Science Foundation and the National Institutes of Health have recently awarded Teresa M. Dunn, Ph.D., professor of biochemistry, two research grants based on her confirmation of the ability of what scientists commonly refer to as the "Awesome Power of Yeast Genetics" to address important problems in basic and clinical research.

Research conducted in Dunn's lab is designed to elucidate the function of sphingolipids, an essential component of nerve cells and cell membranes, and an important class of molecules in cell signaling. Using the "APYG," members of the Dunn lab have used the relatively simple model system, *Saccharomyces cerevisiae* (more commonly known as brewers yeast), to identify more than a dozen genes involved in sphingolipid biosynthesis. With the completion of the sequencing

of the human and plant genomes, it is now clear that many of these genes have been highly conserved throughout evolution, setting the stage for investigating the role of sphingolipids in more complicated organisms.

In April, the National Science Foundation announced that Dunn was the recipient of a prestigious and highly competitive NSF 2010 grant, whose ambitious goal is to identify the function of all genes in the wild-mustard plant, *Arabidopsis thaliana*, by the year 2010. This information will be used to help develop new strategies in crop breeding and pest control. Dunn will be leading a team of internationally respected investigators that includes Jan Jaworski, Ph.D., and Edgar Cahoon, Ph.D., at the Danforth Plant Research Center in St. Louis, Mo., Daniel Lynch, Ph.D., at Williams College in Williamstown, Mass., and Johnathan Napier, Ph.D., at the Rothamsted Research Institute in the United Kingdom. The grant is a four-year award with a total budget of \$2.6 million.

Dunn was notified by the National Institute of Neurological Disorders and Stroke in July that she will also receive a five-year, \$2.9 million grant to study the mammalian version of the enzyme serine palmitoyltransferase (SPT) whose composition and regulation she has previously characterized in yeast. This enzyme catalyzes the committed step of sphingolipid biosynthesis, and its alteration has recently been discovered to be the cause of Hereditary Sensory Neuropathy Type 1 (HSN1), a rare, inherited disease that results in progressive loss of sensation in the lower extremities. This study will be performed in collaboration with Jeff Harmon, Ph.D., professor of pharmacology at USU, and Robert Brown, Ph.D., of the Harvard Medical School.

Publications and Faculty in the News

Willem J. Kop, Ph.D., assistant professor of medical and clinical psychology and co-authors Ad Vingerhoets, Ph.D., Ger-Jan Kruithof, M.D., and John S. Gottdiener, M.D., recently published "Risk Factors for Myocardial Infarction During Vacation Travel," in *Psychosomatic Medicine*, 65:396-401 (2003). Kop also contributed "The integration of cardiovascular behavioral medicine and psychoneuroimmunology: New developments based on converging research fields," to *Brain, Behavior, and Immunity* 2003. 17:233-237, a special issue for which he also served as guest editor.



Juanita J. Anders, Ph.D., associate professor in the Department of Anatomy, Physiology and Genetics, was featured in an article entitled "A Simple Way to Zap Pain." The article was printed in the October 2003 issue of *Health* magazine and discussed the use of low-level laser light as a therapy option. Anders is president of the North American Association for Laser Therapy.

Col. (Dr.) E. Cameron Ritchie, who is currently a student in the USU Master of Public Health degree program and an associate professor in the Department of Psychiatry, was quoted in the October 2003 edition of *Ladies Home Journal* in an article, "When Jenny Comes Marching Home," discussing issues facing women in combat. Ritchie, along with Maj. (Dr.) Michael Bell ('97 and MPH '01), also published "Breastfeeding in the Military. Part I: Information and Resources Provided to Servicewomen," and "Breastfeeding in the Military. Part II: Resource and

Policy Considerations," in *Military Medicine*, October 2003. 8(10): 807-816.

Several USU faculty members shared authorship of an article in the *Military Medicine* article, "Optimal Methods of Learning for Military Medical Education," *Mil Med* 168, 9:46, 2003, pp. 46-50. They include Col. Martha Turner, associate dean, Graduate School of Nursing; Cindy Wilson, Ph.D., professor of family medicine; Lt. Col. Karen Gausman, former commandant, Graduate School of Nursing; and Lt. Col. (Dr.) Michael Roy, assistant professor of medicine.

Hasan Alam, M.D., associate professor of surgery, and co-authors K. Stanton, E. Koustova, D. Anderson, Col. (Dr.) David Burris, Norman Rich, M.D., and Cmdr. (Dr.) Peter Rhee, published "Effect of different resuscitation strategies on neutrophil activation in a swine model of hemorrhagic shock," in the November 2003 issue of *Resuscitation*. Alam also collaborated with G.B. Uy, D. Miller, et. al. on "Comparative analysis of hemostatic agents in a swine model of lethal groin injury," *Journal of Trauma*, 54: 1077-1082, 2003.

Graduate School of Nursing faculty member Lt. Col. Richard Ricciardi, who is an assistant professor in the family nurse practitioner program, published "Designing a Medical Humanitarian Assistance Course for advanced practice nurses in the uniformed services," along with C.J. Aberle, K.J. Bethards, and S.M. Ortega, in *Military Medicine*, 2003 Sep; 168(9): 729-32.

Ajay Verma, M.D., Ph.D., assistant professor of neurology, and Anthony Maurelli, Ph.D., associate professor of microbiology and immunology, authored "Identification of two eukaryote-like serine/threonine kinases encoded by *Chlamydia trachomatis* serovar L2 and characterization of interacting partners of Pkn1," in *Infection and Immunity*, October 2003, pp. 5772-5784, Vol. 71, No. 10.

"Solid phase microextraction sampling and gas chromatography/mass spectrometry for field detection of the

chemical warfare agent O-ethyl S-(2-diisopropylaminoethyl) methylphosphonothiolate (VX)" was published in the *Journal of Separation Science* (J. Sep. Sci. 2003, 26, 1091-1096) by USU Department of Preventive Medicine faculty members Cmdr. Gary Hook and Cmdr. Philip Smith, Maj. Gregory Kimm (MPH '02) of the U.S. Army Command and General Staff College, Fort Leavenworth, Kan., Lt. Cmdr. Geoffrey Betsinger of the U.S. Marine Corps Chemical Biological Incident Response Force, Indian Head, Md., Paul Savage, Brigham Young University, Provo, Utah, and Austin Swift and Tom Logan, both from the U.S. Army Medical Research Institute for Chemical Defense, Edgewood, Md. Hook, Kimm, Savage, and Smith also collaborated with Lt. Cmdr. David Koch, USU Department of Preventive Medicine and Bangwei Ding, of Brigham Young University, on "Detection of VX contamination in soil through solid-phase microextraction sampling and gas chromatography/mass spectrometry of the VX degradation product bis(diisopropylaminoethyl)disulfide," published in the *Journal of Chromatography A* (J Chromatogr A 992 (2003) 1-9).

Maria Braga, Ph.D., research assistant professor, Vassiliki Aroniadou-Anderjaska, research assistant professor, Christopher J. Hough, Ph.D. research assistant professor, and He Li, M.D., Ph.D., assistant professor, all of the psychiatry department, along with neuroscience graduate student Sean T. Manion, published "Stress Impairs alpha(1A) Adrenoceptor-Mediated Noradrenergic Facilitation of GABAergic Transmission in the Basolateral Amygdala," in *Neuropsychopharmacology*. 2003 Oct 8 - PMID: 14532911 [PubMed - as supplied by publisher]. The study provided important insights into possible mechanisms underlying the antiepileptogenic effects of norepinephrine in temporal lobe epilepsy, the hyper-excitability of the amygdala in certain stress-related disorders such as PTSD, and the stress-induced exacerbation of seizure activity in epileptic patients. The abstract of this paper will be presented at the 33rd annual meeting of the Society for

Neuroscience, and was one of 600 chosen by the Society's public information committee from a pool of over 15,500 submissions for inclusion in the annual meeting press book as a lay-language summary. These summaries are used to set up press interviews with scientists whose work is found exciting.

Lt. Col. (Dr.) Woodson Jones, assistant professor of pediatrics, and Phillip Kaleida, M.D., Children's Hospital of Pittsburgh, published "How Helpful is Pneumatic Otoscopy in Improving Diagnostic Accuracy?" in *Pediatrics*, Vol. 112, No. 3, September 2003.

Christopher S. Holland, M.D., M.P.H., M.S.M., assistant professor of preventive medicine and biometrics, wrote "Drug Testing in the Law Enforcement Community," for *Clinics in Occupational and Environmental Medicine* [3 (August, 2003), pp. 625-639].

John Sarvey, professor of pharmacology and neuroscience, died Aug. 20 from complications arising from pancreatic cancer.

Sarvey joined the USU Department of Pharmacology as assistant professor of pharmacology in 1979. At the time of his death he was still directing an active laboratory studying the role of neuronal zinc in synaptic transmission, long-term potentiation and neurodegeneration following ischemia and reperfusion. He had chaired a session on zinc functions in hippocampus at the annual meeting on zinc and synaptic functions in the Cayman Islands less than three months before his death.

For the major part of his research career, Sarvey's primary research interest was in the processes underlying LTP in hippocampus, a cellular model of mechanisms implicated in learning and memory. Most recently, in studies conducted in collaboration with colleagues at Georgetown University, he discovered an involvement of N-acetylaspartyl-glutamate in the modulation of LTP and also the modulatory actions of NAAG at metabotropic glutamate receptors in the dentate gyrus of hippocampus.

His work on the mechanisms underlying LTP from 1984 and onwards, frequently cited, led directly to his developing interest in other aspects of synaptic modulation in hippocampus, and in particular to studies on the role of zinc, a metal that is concentrated in the mossy fibers of the dentate gyrus, where it acts as a synaptic modulator.

In all these studies, Sarvey was aided by the work of a stream of gifted graduate students and post-doctoral fellows who were lured to the Sarvey laboratory by his extraordinary enthusiasm for his research projects, by his ability to transmit this enthusiasm to others, and by his skill in making the hard

and laborious work of obtaining reliable electrophysiological recordings over many hours seem like great fun. It is greatly to his credit that many of his students and trainees have gone on to develop distinguished research careers in their own right.

Sarvey was also an excellent teacher of medical students, receiving student recognition for his outstanding teaching skills almost every year.

It was typical of his dedication to his students and his profession that, even after his condition was diagnosed last year, he insisted upon remaining in the role of course director for the medical pharmacology course. USU recognized his outstanding dedication to medical and graduate student teaching in May 2003 with the award of the University Medal, the highest mark of recognition of service to USU.

Sarvey was born in upstate New York in 1946, and attended Williams College in Massachusetts. After college, he entered the National Guard and served as a Special Forces medic prior to attending the State University of New York at Buffalo for his doctorate degree in pharmacology. Following his doctoral training, he moved to Frankfurt, Germany as a post-doctoral fellow.

Sarvey is survived by his wife, Cornelia, whom he met during his studies in Frankfurt, and their three children, Lisa, Benjamin and Thomas. With his untimely passing, his family lost a proud and devoted husband and father; USU has lost an outstanding faculty colleague who enlivened and enriched the academic environment. His contributions to science will long be recognized and his enthusiasm for life will remain with everyone here and in the lives of the countless students whose careers he has touched.



John Sarvey, Ph.D.
1946-2003

St. Pierre Selected for Prestigious Fellowship

A former infantryman-turned-physician has been chosen for a medical exchange fellowship program.

Col. (Dr.) Patrick St. Pierre ('87), assistant chief of orthopaedic surgery at DeWitt Army hospital at Fort Belvoir, Va., is not only the winner of the 2003 American Shoulder and Elbow Surgeon's traveling Fellow post, but the first military doctor to be named to the program. "I'm honored to be selected and able to represent the ASES over in Europe," he said.



Through educational programs and by encouraging research, the organization seeks to foster and advance the science and practice of shoulder and elbow care. That's the motto of ASES, a society made up of leading national and international orthopaedic surgeons specializing in surgery of the shoulder and elbow. The society is an educational body responsible for development of scientific programs, for organization of

current knowledge, for standardization of nomenclature and for publication of scientific materials.

Every year the 206 member ASES, along with their European counterparts, alternate choosing two Fellows to travel to their respective continents to confer with shoulder specialists and other Fellows. St. Pierre, as the traveling Fellow will make about 10-15 stops in European countries including Italy, Denmark, Germany, Switzerland and France. He will participate in an average of three to five sessions at each location. "It's a great time to exchange ideas and see what they (Europeans) are working on and exchange viewpoints on how to treat shoulder conditions."

St. Pierre attended the U.S. Military Academy and served as an infantry officer following graduation. He did stints as a platoon leader in the 2nd Infantry Division, Korea and for The Old Guard at Fort Myer, Va. Afterward, he attended USU before completing an orthopaedic residency program at Madigan Army Medical Center, Tacoma, Wash. Following subsequent fellowships in Sports Medicine and shoulder and medical research, St. Pierre returned to practice at Madigan, before transferring to DeWitt where he has served for the last two years as assistant chief of orthopaedic surgery.

St. Pierre's research has won awards from the Eastern Orthopaedic Association, Walter Reed Army Institute of Research, Society of Military Orthopaedic Surgeons, Arthroscopy Association of North America and the American Orthopaedic Society for Sports Medicine.

St Pierre said as an ACES traveling Fellow he will finally get to meet European colleagues face to face rather than simply reading their names in journals. "We will talk about where we want to go in the next 20 years and to make shoulder treatment and diagnoses better to improve our patient care," he said.

Bob Coultas, DeWitt Army Community Hospital Public Affairs

Alumni Assistance Needed for University Movie Project

Terry Sanders, an award winning filmmaker whose projects include "Return With Honor" and "Maya Lin: A Strong Clear Vision," has indicated a strong interest in producing a documentary film about military medicine and USU. The project, if carried out, will have a major impact for the University in getting its message out to the world.

Mrs. Tammy Alvarez, the wife of USU Board of Regents Chairman Everett Alvarez, has graciously volunteered her

time to spearhead this effort; however, alumni assistance is needed.

Government funds cannot be used to pay for certain costs associated with the documentary project. Mrs. Alvarez has requested that alumni email her directly at Alvycomm@aol.com to share any ideas for potential funding sources or ideas for the film project itself to help ensure its success.

notes

Murphy Awarded for Work in Info Therapy

An F. Edward Hébert School of Medicine graduate of the class of 1984 has been recognized by *U.S. Medicine*, a medical news organization, for his pioneering work in information therapy.



Col. (Dr.) Kent Murphy, founder of the Air Force Academy's Center of Excellence for Medical Multimedia, was awarded the Frank Brown Berry Prize in Federal Healthcare. His influence is far reaching in the military medical world, with the most significant impacts branching from his work with the center, according to officials.

The concept behind the center is that information technology can empower patients by educating them on medical techniques.

"I felt that there was a lot of great information out there for doctors," Murphy said. "The most underserved individuals are those (who) are sick, however. I felt that medicine needed to take from the technology of the entertainment industry to help remedy that."

The center uses high-tech cinemagraphic technology to create multimedia programs. The programs cover an array of medical topics including pregnancy, diabetes, early detection of colon cancer, suicide prevention and outpatient surgical procedures.

"We try to take complex medical topics and simplify them for patients," said Murphy, who founded the center in 1998. "The



center uses a lot of animation to make the topics interesting. We utilize a lot of technologies found in movies ... to show people about their bodies.

"I feel very honored to receive the Berry Award. When I look at the caliber of past winners, it is a privilege to be named with those individuals," said Murphy, who is the first Air Force member to win the award.

For more information about the center and to get a glimpse of their projects, visit www.cemm.org.

Capt. (Dr.) Karen Parko, U.S. Public Health Service ('91), was one of the 10 top finalists for the Berry Prize for her work with underserved populations at the Northern Navajo Medical Center in Shiprock, N.M.

U.S. Air Force News



USU Grads Earn Nation's Highest Exam Score

Two USU alumni were among six residents in Tripler Army Medical Center's otolaryngology (ENT) program who earned the nation's highest average score on a mandatory ENT in-service examination.

Capt. (Dr.) Philip Littlefield ('99) and Capt. (Dr.) Jennifer Bager ('00) were among the six earning top honors. Littlefield, a fourth-year resident, also achieved the country's highest individual score on the exam.

"I studied hard this year but did not get stressed out," Littlefield said. "I have a habit that works well. Whenever I read something in a book or journal, I ask myself how I can use the knowledge to take care of a patient and how would somebody make a multiple choice question out of it."

The test is given annually to ENT residents across the country and assesses their knowledge base in otolaryngology. Residents receive a raw score, a percentile score for all tested, and a percentile score for those in the same year of training. The latter gives the resident and program director an idea of how the resident is doing compared to his or her peers across the country. According to Bill Bolger, M.D. ('86), an otolaryngologist and associate professor in USU's Department of Surgery, that information is important when physicians take the ENT board exam after residency graduation, as only about 75 to 80 percent pass.

Capt. (Dr.) Michael Holtel, U.S. Navy ('84), is the otolaryngology department chairman and residency program director at Tripler Army Medical Center.

'80

Capt. Sandra Yerkes remains the sole "charter martyr" on active duty. She is currently assigned as the deputy chief of the Navy medical corps at the Bureau of Medicine and Surgery in Washington, D.C.

'81



Brig. Gen. Bill Fox recently assumed command of Brooke Army Medical Center, Fort Sam Houston, Texas. Fox, a urologist, was also presented the Norman M. Rich Department of Surgery 2003 Baron Dominique Jean Larrey Award for Excellence in Military Surgery by the USU Surgical Associates in August.

'82



Richard Bakalar, M.D., retired earlier this year from the Navy at the rank

of Captain. His last assignment was as head of the Naval Telemedicine Business Office at the Naval Medical Information Management Center in Bethesda, Md. Bakalar is now employed by IBM.

'86



Col. Kory Cornum is the 86th Medical Squadron commander at Ramstein AB, Germany. His wife, and USU classmate, Col. Rhonda Cornum is now the commander of Landstuhl Regional Medical Center in Germany. Prior to their arrival in Germany, both attended the National War College at Fort McNair in Washington, D.C.

'87

Lt. Col. Dallas Homas, a reconstructive and plastic surgeon assigned to Tripler Army Medical Center, in Honolulu, Hawaii, recently led a 17-member team to Cambodia for a two-week training mission in blast trauma. The area was selected because of the high numbers of unexploded ordnance and land mines still scattered about the countryside. In addition, the group served a humanitarian purpose by offering first-class surgery and medical services to approximately 360 of the nation's poor, including one farmer whose hand was nearly lost when his hoe struck a landmine. Although his thumb could not be saved, the team was able to repair the rest of his hand, punctured lung and cracked ribs.

'89

Classmates Lt. Col. Duane Cespedes and Lt. Col. David Ririe, both assigned to Wilford Hall USAF Medical Center, Lackland Air Force Base, Texas, are leading the battle against prostate cancer. In an article produced by the 59th Medical Wing public affairs office, Cespedes and Ririe were cited as instrumental members of a team of researchers who were involved in a "highly publicized, landmark study on the drug Finasteride's (Proscar) ability to prevent prostate cancer." According to the article, "Wilford Hall was the largest site – providing roughly 10 percent of the participant population – for this extensive seven-year, nationwide study, named the Prostate Cancer Prevention Trial, or PCPT." The trial found a 25 percent reduction in prostate cancer occurrences for healthy males taking the drug. The findings were published in the July 17 edition of *The New England Journal of Medicine*.

'92



Class of '92 alumni Cmdr. Melanie Mitchell, Cmdr. Sharon Miller, and Cmdr. William "Mike" Hall are among the health care providers assigned to the Navy's first Expeditionary Medical Unit (EMU-10), which is serving in Djibouti as part of Operation Enduring Freedom. USU graduates comprise four of the six physicians assigned to the unit. Capt. Raphael Roure ('82), not pictured, is the fourth.

'96

Lt. Col. Glenae Palmer, a graduate of the nurse anesthesia program, is the chief of anesthesia services at the 6th Medical Group, MacDill Air Force Base, in Tampa, Fla. Palmer will be retiring in April 2004.

'97

Lt. Col. Virginia Garner, a family nurse practitioner program alumna, was named as the Air Force Advance Practice Nurse of the Year for 2002 while assigned to Tinker Air Force Base, Okla. Garner is now assigned to the 45th Medical Group, Patrick Air Force Base, Fla.

Maj. Beth Decker is the senior nurse practitioner in the Women's Health Clinic at the 89th Medical Group, Andrews Air Force Base, Md.

USU Alumni Aid Bolivians



USU graduates Capt. Robert Elwood ('00), Maj. Patrick Danaher ('97), Capt. Audrey Hall ('01), and Capt. Jeffrey Molloy ('01) take time out to pose for a photo while on a humanitarian mission in August. The graduates, part of a team deployed from Travis Air Force Base, Calif., provided medical care to residents in the small town of Yacuiba in southern Bolivia. Over a two-week period, the physicians cared for more than 7,100 patients who presented a variety of illnesses and conditions ranging from intestinal parasites, birth defects, and viral illnesses to skin infections, including leishmaniasis.

Both Elwood and Hall are pediatric residents. Molloy is a medicine resident, while Danaher is a staff internist.



Air Force Maj. Elizabeth Rouse ('95) sits atop a tank in Baghdad during deployment for Operation Iraqi Freedom. Rouse, a forensic pathologist, was part of a team from the Office of the Armed Forces Medical Examiner sent to Iraq on a mission to investigate mass graves and missing war dead shortly after the major combat phase ended in May.



Several USU alumni recently returned to the campus for an Advanced Trauma Life Support course. Among the attendees were (back row, l to r): Michael Toedt ('95), Songhai Barcliff ('99), Al-Karim Dhanji ('96), Nicholas Piantanida ('93), John Mohs ('96). (Front row, l to r): Julia Watkins ('98), Daisy Eng ('00), Rochelle Nolte ('96), and Tracey Petrides ('96).

Malaria Outbreak: A USU Success Story

Two hundred twenty-five United States Marines from Camp Lejeune, N.C., disembarked from the decks of the USS Iwo Jima and USS Carter Hall, landing on the shores of Liberia as part of a joint task force operation ordered by President George W. Bush in August.

Once on land, the Marines worked to set up shelter, cleaning out an old rat-infested food warehouse filled with human feces and dead animals. The climate was hot and the building offered no air conditioning, so many of the troops opted to sleep on the roof, subjected to unrelenting attacks by mosquitoes.

When they returned to their ships after 10 days on shore, a few Marines complained of illness. A couple of them reported to the Carter Hall's sick bay with temperatures of 102.5, body aches, and fever, but initial diagnoses pointed to viral illness and dehydration.

On Sept. 3, a Marine passed out in his berthing space aboard the Carter Hall and was taken to sickbay. He was transferred to the Iwo Jima, where more specialized medical care was available. Simultaneously, scores more Marines began complaining of headaches, body aches, fever and diarrhea.

Lt. Cmdr. John Newman ('92), a general surgeon assigned to the Iwo Jima's medical department, saw one of the patients and immediately recognized symptoms of malaria. Newman had studied malaria while in medical school at USU, but had recently returned to the university for a six-week tropical medicine course just prior to his deployment in which malaria was significantly emphasized. As a result, he was the only person on board the two ships who had the expertise to take malaria smears and read them, finding falciparum malaria, the most serious form of the parasitic infection, in several. Newman immediately started the patients on quinidine and called for them to be evacuated for further treatment.

But Newman also harbored concerns that the Marines might have contracted something worse than malaria because of the variety of symptoms they presented, and put in a call to the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) at Fort Detrick, Md., for further guidance. Capt. Robert Darling ('85), an emergency physician and medical director of USAMRIID's aeromedical isolation team, was consulted.

"The TRANSCOM people were concerned that the Marines could have had a VHF (viral hemorrhagic fever) or some other potentially contagious, lethal disease," Darling said. "They wanted to know if the aeromedical isolation team could or should get involved. As we discussed what was quickly unfolding, we determined that the team would not



be necessary. By that time, Greg Martin, Tim Endy and others took charge."

Capt. Gregory Martin, assistant dean for special projects and associate professor of medicine at USU, and an expert in infectious diseases, received a call from USAMRIID asking him to get involved. Martin called the ship and talked to Newman who relayed his concerns that the Marines might have Lassa fever, a disease that is potentially transmissible in a health care setting, or leptospirosis or some other rickettsial disease.

In the meantime, two of the Marines diagnosed had initially been transferred to Landstuhl Regional Medical Center in Germany for care, but when 20-30 more came down with the same symptoms the following day, the decision was made to forego evacuation to the Army medical center – which did not have the diagnostic capabilities of USAMRIID, USU, or WRAIR – and divert the plane back to the Washington, D.C., area.

On Sept. 5, 31 Marines were medically evacuated to the United States for treatment at the National Naval Medical Center in Bethesda, Md. Martin, after hearing about symptoms of headaches, body aches, fever, increased liver enzymes, high bilirubin levels, etc., considered the possibility that they might very well be dealing with something other than malaria, so he called Col. Timothy Endy ('86) to discuss Lassa fever and other viral hemorrhagic diseases. Endy, the director of communicable diseases and immunology at WRAIR, had recently transferred from USAMRIID, but previously had spent five years studying such tropical diseases firsthand as the chief of virology at the Armed Forces Research Institute of Medical Sciences in Bangkok, Thailand, and therefore had the specialized expertise in viral hemorrhagic fevers and high-level biocontainment procedures possibly needed in the Marines' case.



Martin and Endy contacted USAMRIID, setting in motion a plan to perform tests on blood samples to detect Lassa fever or any other similar viral diseases. According to Martin, USAMRIID has the drugs on hand needed to treat such fevers.

The doctors needed to establish an isolation area at NNMC in case the disease was infectious. Martin consulted numerous times with Endy and Col. Donald Skillman ('82), an infectious disease specialist and director of the division of experimental therapeutics at WRAIR, about sending the patients to NNMC. He said the potential existed for the hospital's laboratory facilities to be contaminated if samples were tested there and indeed showed positive for Lassa fever. Endy arranged for USAMRIID personnel to come to NNMC to conduct the Elisa tests necessary to rule out viral hemorrhagic diseases. He also coordinated having all laboratory work done at USAMRIID until they could rule out the transmissibility of the disease.

"I supported the Navy group in giving advice on containment techniques for the returning soldiers, clinical management of viral hemorrhagic fevers and arranging for the delivery of blood samples to be tested for Lassa fever at USAMRIID," Endy said of his role.

At 4 a.m. on Sept. 7, the Marines touched down at Andrews Air Force Base. A five-member infectious disease team from NNMC and Endy met them. Martin led the team, who were all wearing protective suits, masks, gloves and shoe coverings. Two Marines "crashed" en route to Andrews and had been intubated and were on ventilators. Another one was close to doing the same. The remaining Marines all had fevers but were walking and talking. Everyone was taken to NNMC and isolation precautions were put in effect, including issuing them 16 gallons of bleach – one gallon for each bathroom to flush down the toilet with any waste to keep rats in the sewer system from contracting Lassa fever or any other transmissible disease.

The next day 10 more Marines and two German troops were brought in, bringing the total to 43 troops

stricken, with three in the intensive care unit and one on the brink of death.

According to Martin, Skillman's laboratory at WRAIR is one of very few in the world with the capabilities to conduct in-vitro sensitivities to malaria, a process he deemed "critical in this instance."

"We took blood samples from ten of the patients and grew malaria from them," said Skillman. "These cultures were then used to test for sensitivity to all of the available anti-malaria drugs."

Capt. Philip Coyne ('85), an infectious disease specialist in the U.S. Public Health Service working in Skillman's division at WRAIR and with ties to the Food and Drug Administration, offered his help to Martin.

As patients arrived at NNMC, Coyne said it was not clear whether they were responding to the intravenous quinidine they were administered. Quinidine is the only approved drug for severe malaria available in the U.S. In the context of trying to sort out the cause, or causes, of the episode, Coyne said it was also important to document the quality of the antimalarial drug the Marines were supposed to have been taking to avoid contracting the disease. He contacted the FDA to get the remaining tablets of mefloquine collected from the Marines and submitted to the appropriate FDA laboratory for quality assurance testing.

As the emergency operations officer for the FDA's Center for Drug Evaluation and Research, U.S. Public Health Service Capt. Ralph Lillie (MPH '93) serves as the primary contact and facilitator for emergency or crisis situations that do not fit normal regulatory pathways. Lillie was contacted by Coyne and then worked to establish formal contact with the involved DoD components. He also arranged for the drug samples to be accepted by the FDA, coordinated their laboratory testing, and arranged clinical input and support as needed throughout the process.

While all of this was taking place on U.S. soil, Lt. Cmdr. Christopher Clagett ('92 and MPH '00) was dispatched from the Navy Environmental Preventive Medicine Unit No. 7 on the Italian island of Sicily to the Iwo Jima and the Carter Hall.



Clagett was tasked with conducting an investigation into the cause of malaria outbreak among the Marines.

He interviewed hundreds of Marines, documenting responses to questions about their use of antimalarial drugs, mosquito netting, Permethran insecticide spray used to treat clothing before deploying to tropical environments, and any other relevant factors. The report of his findings suggested that the cause of the outbreak was lay primarily with the Marines for not taking their prescribed medications.

Martin said this incident is the perfect example of USU's value to the uniformed services, citing the tone set at USU for deployment medicine, with its emphasis on malaria and other exotic diseases. He also praised USU for its joint service training

environment and the impact on participants in this particular instance. "There was no boundary of uniform. It was a DoD matter. It worked very well. They [the medical response participants] all had the connection of USU and its program. The concept of the purple suit – it works – in infectious diseases more than any other specialty. They are intertwined, work well together, and know the strengths of their programs. They can avoid turf battles and know who will get the job done."

Martin also credits Newman and the university for averting a potential disaster.

"The cost [to the Navy] of John Newman taking the tropical medicine course [at USU] was worth it. It saved lives."

Sharon Willis

Sam A. Nixon, M.D.

Former chair of the USU Board of Regents, died Aug. 17 in Victoria, Texas.

Sam A. Nixon, M.D., was appointed to the USU Board of Regents in 1985 by President Ronald Reagan and was later named chair following the death of Dr. Francis Coleman in 1988. He served on the board until 1992.

Nixon was a family practitioner who graduated in 1950 from the University of Texas Medical Branch of Galveston, Texas. After medical school, Nixon served in the U.S. Army Medical Corps in Korea, Japan and Texas. For 23 years he cared for patients in his hometown of Nixon, Texas, and in neighboring Floresville, Texas. In 1977, he moved to Houston where he served at the University of Texas Medical School on the faculty of the family and community medicine department. He spent the next two decades of his life working in medical education at the University of Texas Health Science Center before he eventually retired, pursuing a subsequent position as associate medical director for the South Texas region of Blue Cross/Blue Shield of Texas.

Nixon also served as a past president of the Texas Academy of Family Physicians and the American Academy of Family Physicians, and was a delegate to the AMA House of Delegates for 25 years. He was a past president of the Harris County Medical Society, and the Gonzales County Medical Society, as well as the Texas Medical Association, from whom he earned the Distinguished Service Award and Emeritus membership status for exceptional service to scientific and organized medicine.

Nixon was also honored as the first recipient of the Texas Academy of Family Physicians' Lifetime Achievement Award.

He is survived by his wife, Elizabeth Nixon, and four daughters.



Profiles in Service:

Brig. Gen. Frederick W. Plugge, IV, U.S. Air Force, Ret.

Retired Air Force Brigadier General Frederick W. Plugge, IV, a USU Norman M. Rich Department of Surgery faculty member, will be honored in April 2004, when the Society of Air Force Clinical Surgeons, for whom he served as a past president, presents its first annual lecture named in his honor. The lecture was established based on a recommendation from interim surgery department chairman Col. (Dr.) David Burris, and will provide an opportunity for USU and the Society to share ideas and support during the Society's yearly meeting.

Plugge is one of USU's earliest faculty members, having joined the university's Department of Surgery as an associate professor in the fall of 1976. He was chief of surgery at Malcolm Grow USAF Medical Center at the time.

Plugge provided outstanding support to USU through his expertise and many notable achievements. In 1977, he served as vice chair of the department and the following year was promoted to full professor. Although he held other assignments throughout his long and distinguished career, Plugge always maintained his USU faculty appointment, even after his retirement from the Air Force over a decade ago. He continued his teaching activities at USU until the end of 2002, and has since been recommended for continuation as Professor Emeritus, a distinction held by only one other surgery faculty member, retired Vice Adm. Donald Custis.

In 1957, Plugge earned his Doctor of Medicine degree from the University of Maryland medical school. He completed his internship in Montreal, Canada, at the Royal Victoria Hospital and then returned to Baltimore for his residency in general surgery at the University of Maryland, followed by an American Cancer Society clinical fellowship at Yale University in Connecticut.

Plugge held a variety of positions within the Air Force, among them director of Medical Inspections at Norton Air Force Base, Calif., commander of David Grant USAF Medical Center, Travis Air Force Base, Calif., and his last assignment as command surgeon for the Military Airlift Command, Scott Air Force Base, Ill. He also provided physician support on official government-sponsored trips for dignitaries including then-Governor Ronald Reagan, Vice President Gerald Ford, former First Lady Rosalynn Carter, former Secretary of Defense James Schlesinger, and former treasury secretary William Simon.

In 1972 Plugge was appointed senior military consultant in general surgery to the Air Force surgeon general, a job he held until his retirement from the military.





"One of the most wonderful things that came from this (deployment) was a sense of working together. You learn that at USU . . ."

– Lt. Cmdr. Patricia McKay, U.S. Navy

***Uniformed Services University
4301 Jones Bridge Road
Bethesda, MD 20814-4799***

First Class Prst
U.S. POSTAGE PAID
COLUMBIA, MD 21045
PERMIT NO. 334